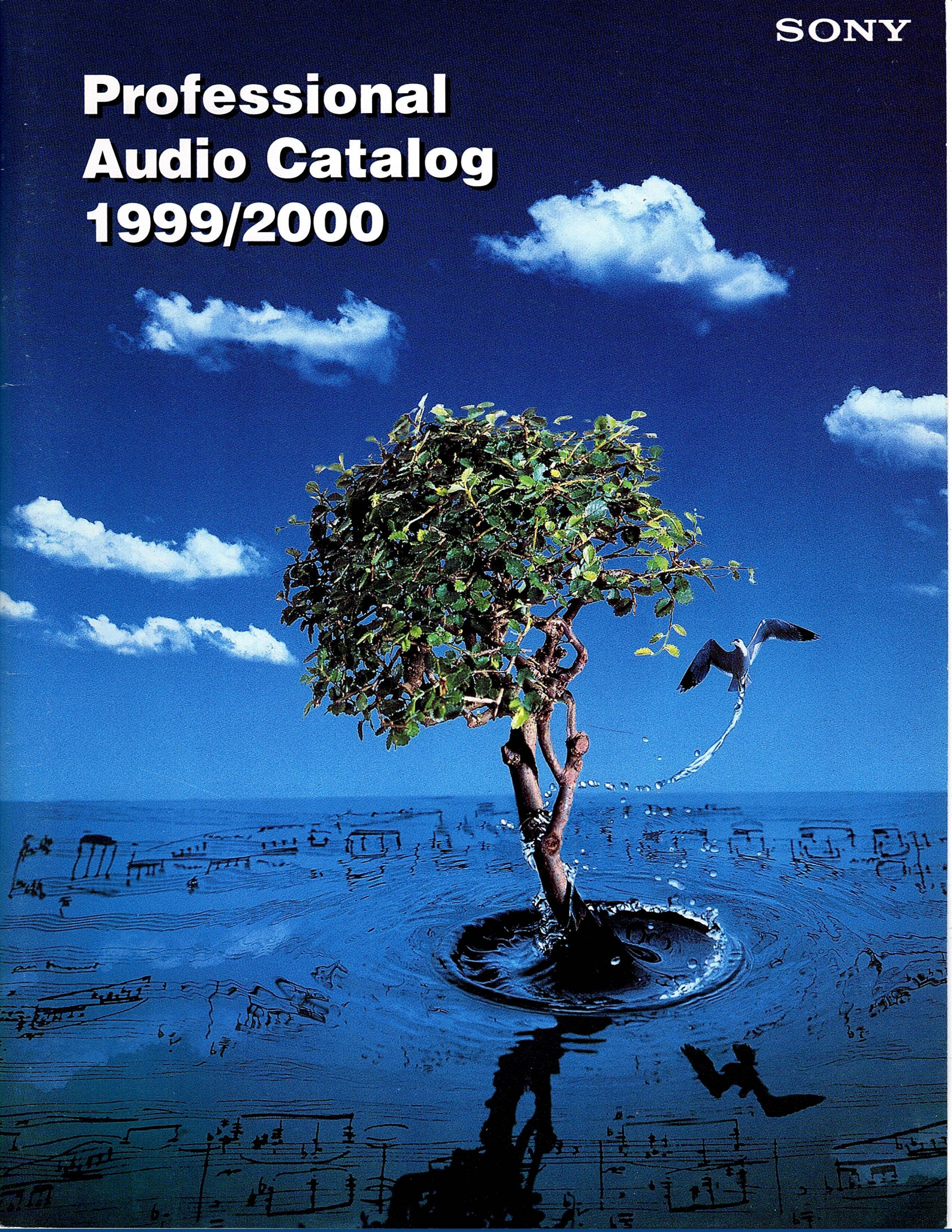
SONY

Professional Audio Catalog 1999/2000



Professional Audio Products

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SECTION 1

Digital Multitrack Recorders

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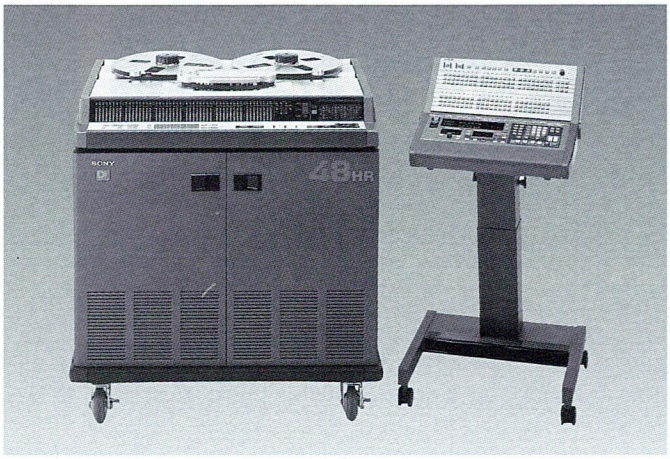
DASH PLUS

Digital Audio Multitrack Recorder

PCM-3348HR



- Provides 48-channel recording with selection of 16-bit or 24-bit resolution
- Create a sophisticated, 24-bit rate recording system in combination with the OXF-R3 Digital Audio Mixing Console and the PCM-9000 Digital Master Disc Recorder
- 24-bit high resolution recording – the PCM-3348HR allows up to 46 minutes of 48-channel 24-bit digital audio signals to be recorded
- Uses standard DASH 1/2 inch tape
- Compatible with 16-bit DASH machines – a tape recorded on 16-bit DASH recorders can be played back on a PCM-3348HR using its 16-bit mode. A tape recorded on a PCM-3348HR using its 16-bit mode can be played back on current 16-bit DASH recorders
- DASH synchronization between a PCM-3348HR and other DASH machines is also possible
- A variety of digital audio input/outputs are standard– 48-channel balanced SDIF-2 I/O, 48-channel MADI I/O, 8-ch AES/EBU I/O, 2-ch unbalanced SDIF-2 I/O
- Equipped with Sony 9-pin serial remote interface
- Sound memory functions 80 second 24-bit stereo sound memory

Optional Accessories

DABK-3343HR Converter Board Pack

Provides 48 channels of ADC and DAC

DMU-3048 Digital Meter Unit

- 48 channel meter unit
- Channel status indication

Supplied Accessories

RM-3348HR with stand (x1)

2-ch unbalanced SDIF-2 board (x1)

2-ch AES/EBU board (x4)

RH-10DA 10-inch empty reel (x1)

AC power cord for PCM-3348HR (x1)

AC power cord for RM-3348HR (x1)

Remote cable (10m, x1)

Extension board (x1)

Operation manual (x1)

Installation manual (x1)

Quick reference (x1)

Analog I/O 27-pin multichannel connector plug

(NK-27-32SL type x6, NK-27-31SL type x6)

Remote interface connector (x8)

CL-1/2-12 Tape Cleaner (x1 box)

Specifications
PCM-3348HR

Format/ Performance

Recording format:	DASH PLUS/DASH-F Double Density
Digital audio channels:	48 channels
Quantization:	24-bit/16-bit linear switchable
Error correction:	Cross Interleave
Recording time:	24 bit: 40 minutes, 16 bit: 60 minutes (Fs=48kHz, with 14-inch reel) 24 bit: 44 minutes, 16 bit: 65 minutes (Fs=44.1 or 44.056kHz, with 14-inch reel)
Tape speed:	24-bit: 114.30 cm/s, 16-bit: 76.2 cm/s (Fs=48kHz) 24-bit: 105.01 cm/s, 16-bit: 70.01 cm/s (Fs=44.1kHz) 24-bit: 104.91 cm/s, 16-bit: 69.94 cm/s (Fs=44.056kHz)
Variable tape speed:	± 12.5%
Fast forward time:	4min 20s (with 14-inch reel) 2min 25s (with 10-inch reel)
Recommended tape:	1/2-inch width, Sony D-1/2-2920 (14-inch reel), D-1/2-1460 (10-inch reel)
Reel size:	14/12.5/10 inches
Recording tracks:	Digital tracks 1 to 48, Analog tracks A1 and A2, time code and CTL
FWD rise time :	Less than 0.50 s
FF / REW maximum speed:	16.0m/s
Slow wind speed:	1.52m/s
Shuttle speed:	± 7.6cm/s to 3.8m/s
Input sensitivity of external speed control:	160 cm/s/V
Input sensitivity of external phase control:	± 5%/V of playback speed
Locate accuracy:	± 3.6s, with timer roller (14-inch reel) 0 to 64ms with CTL address (14-inch reel) (used when the CTL address on the tape can be read)

Editing Accuracy

Cross fade time:	Fs (kHz)	48,	44.1,	44.056
	Electronic editing (min.)	1.4ms,	1.5ms,	1.5ms
	(max.)	341.3ms,	371.5ms,	371.9ms
	Splice editing	5.2ms,	5.6ms,	5.7ms
	(Note: 16 steps adjustment between min. and max.)			
Editing accuracy:	1 sector (1.00ms at Fs=48kHz, 1.088ms at Fs=44.1, 1.09ms at 44.056kHz			

Digital Audio Signal Characteristics

Frequency response:	20Hz to 21.7kHz within +0.5/-1dB (Fs=48kHz)
Total harmonic distortion:	0.009% TYP (20Hz to 20kHz, at reference level)
Dynamic range:	105dB TYP (1kHz, Emphasis OFF, BW 30kHz)
Crosstalk between channel:	105dB TYP (20Hz to 20kHz, at reference level)
Emphasis:	50μs/15μs, ON/OFF selectable for each channel
Sampling frequency:	48, 44.1 or 44.056kHz ± 50ppm Fs shift (1000/1000 x 44.1kHz and 48kHz)
Delay time of signal processing:	Average delay time in playback: 264 blocks Average delay time in recording: 240 blocks Advance out: 256 words variable in 1 sample steps

Digital Inputs / Outputs

SDIF-2 balanced IN (48 ch):	RS-422A, D-sub 50P (x2)
SDIF-2 balanced OUT (48 ch):	RS-422A, D-sub 50S (x2)
SDIF-2 unbalanced IN (2 ch):	TTL compatible, 75Ω, BNC (x2)
SDIF-2 unbalanced OUT (2 ch):	TTL compatible, 75Ω, BNC (x2)
AES/EBU IN (8 ch):	XLR-3-31 type (x4)
AES/EBU OUT (8 ch):	XLR-3-32 type (x4)
MADI IN:	MADI unbalanced, ECL, 75Ω, BNC (x1)
MADI OUT:	MADI unbalanced, ECL, 75Ω, BNC (x1)

Analog Audio Signal Characteristics

Frequency response:	50Hz to 10kHz ± 2dB/-6dB
Signal to noise ratio:	More than 60dB (at 1kHz, +19dBu)
Total harmonic distortion:	Less than 3% (at 1kHz, reference imput level)
Wow and flutter:	Less than 0.1% RMS WTD (LPF 200Hz)

Analog Inputs / Outputs

Digital audio IN (48 ch):	+4dBu (+24dBu max.), more than10kΩ, balanced NK-27-31SL (x6)
Digital audio OUT (48 ch)	+4dBu (+24dBu max.), less than 100Ω, balanced, NK-27-32S (x6)
Analog audio IN (2 ch):	+4dBu (+19dBu max.), more than 10kΩ, balanced, XLR-3-31 type (x2)
Analog audio OUT (2 ch)	+4dBu (+19dBu max.), less than 100Ω, balanced, XLR-3-32 type (x2)

Other Inputs/ Outputs

Time code IN:	0.5 to 10Vp-p, more than 10kΩ, balanced, XLR-3-31 type (x1)
Time code OUT:	2.4Vp-p ± 0.1V, variable within 1.8V to 3.4V. less than 100Ω, balanced, XLR-3-32 type (x1)
Word sync IN/ OUT:	TTL compatible, 75Ω, unbalanced, with loop-through, BNC (x2, each)
Sector sync IN/ OUT:	TTL compatible, 75Ω, unbalanced, with loop-through, BNC (x2, each)
Sector address IN/ OUT:	TTL level, 75Ω, unbalanced, with loop-through, BNC (x1, each)
Reference video:	75Ω, unbalanced, with loop-through, BNC (x2, each) Black burst: 0.3Vp-p Composite sync: 4Vp-p Square wave: 0.3Vp-p to 5Vp-p
Remote-1 IN:	SRIF-1 format, D-sub 37-pin (female x1)
External speed control IN:	±10V, balanced, XLR-3-31 type (x1)
External phase control IN:	±10V, balanced, XLR -3-31 type (x1)
Remote-2 IN:	RS-422A, D-sub 9-pin (female x1)
Ext. trigger IN:	Sound memory control, XLR-3-31 type (x1)
Remote-3 IN:	SRIF-3 format, RS-422A, D-sub 50-pin (female x1)
Remote-4 IN:	SRIF-4 format, AUX: D-sub 25-pin (male x1) REC RDY CONTROL: D-sub 50-pin (male x4)

Cable Length

Digital I/O:	SDIF-2 balanced: less than 75m SDIF-2 unbalanced: less than 30m AES/EBU: less than 100m MADI: less than 50m Sync: less than 75m
Remote meter:	less than 100m
Remotes:	Remote-1: less than 20m Remote-2: less than 75m Remote-3: less than 120m Remote-4: less than 20m, AUX, REC RDY CONTROL

General

Dimensions:	916(W) x 997(H) x 740(D) mm, (36 1/8 x 39 3/8 x 29 1/4 Inches)
Mass:	Approx. 220kg (485 lb)
Power requirements:	AC 120V, 60Hz (USA and Canada) AC 100V, 50/60Hz (Japan) AC 220V to 240V, 50/60Hz (Europe)
Power/current consumption:	1.2kW (USA Canada and Japan), 7A (Europe)

DIGITAL AUDIO STATIONARY HEAD
DASH

Digital Audio Multitrack Channel Recorder

PCM-3348

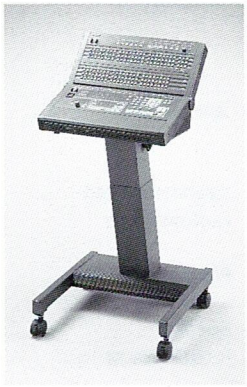
- DASH Recorder with 48 digital audio tracks, 2 cue tracks and one track each for CTL and time code signals
- 2 times oversampling digital filtering for both A/D and D/A converters
- Wide range of audio interfacing—balanced analog multi I/O and three types of digital I/O (AES/EBU, SDIF-2 balanced/unbalanced)
- Comprehensive microprocessor-controlled servo system, unique design and excellent mechanics for fast and stable transport
- Built-in time code generator/reader capable of handling SMPTE drop frame/non-drop frame, EBU and film time codes
- 48kHz, 44.1kHz or 44.056kHz sampling frequency selectable
- Advanced digital/analog output function enables predelay adjustment in 1-sample steps to compensate for signal processing delay in external equipment
- Approx. 20 seconds of digital audio data can be stored in sound memory and re-recorded back onto tape at any position

Supplied Accessories

Remote cable (10m)
Multi-connector plug (27-pin male, x6)
Multi-connector plug (27-pin female, x6)

RM-3348

Remote control unit with stand



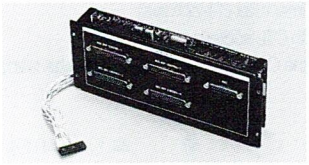
- Provides control over all functions of PCM-3348 including variable speed control, digital ping pong, sound memory, memory back up for three days, repro mute, synchronized operation of two or three PCM-3348 or PCM-3324S/3324A/3324 machines
- Dimensions: 526 (W) x 1068(H) x 536(D)mm (20 3/4 x 42 1/8 x 21 1/8 inches) w/stand
- Weight: 28kg (61 lb 12 oz) w/stand

Optional Accessories

DABK-3340

Remote Interface Board for PCM-3348

- Interfaces with PCM-3348 directly with a mixing console through SRIF-4



DABK-3342/1

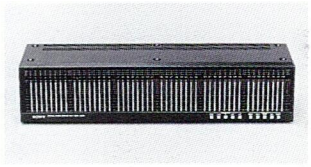
MADI Digital I/O

- Provides selection of 48 ch 16-bit operation or 24 ch 24-bit operation.

DMU-3048

Digital Meter Unit for PCM-3348

- Dimensions: 700(W) x 152(H) x 200(D)mm (27 3/4 x 6 x7 7/8 inches)
- Weight: 10kg (22 lb 1 oz) w/o cable
- Power requirements: AC 100 to 120V/220 to 240V, 50/60Hz
- Power consumption: 48W



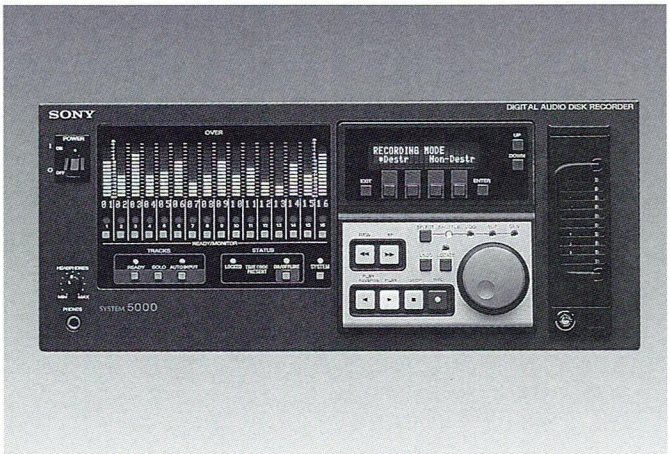
Specifications

PCM-3348

Recording format:	DASH
Number of tracks:	48 digital audio tracks, CTL track, TC track and 2 cue tracks
Tape speed:	(at fs=48kHz) 76.20cm/s
Recording time:	60 min. with 14-inch reel at fs=48kHz
FF and REW time:	4 min. 20s with 14-inch reel
Variable speed range:	± 12.5%
Sampling frequency:	48kHz, 44.1kHz and 44.056kHz
Quantization:	16-bit linear
Dynamic range:	More than 90dB (emphasis ON)
Frequency response:	20Hz to 21,700Hz +0.5dB/-1.0dB
Total harmonic distortion:	Less than 0.1% (+4dBs)
Wow and flutter:	Below measurable limit
Inter-channel crosstalk:	Less than -80dB
Editing resolution:	1 sector (1ms at fs=48kHz)
Crossfade punch in/out:	(fs=48kHz) 1.4 ms to 341.3 ms (in 16 steps)
Splice editing:	5.2 ms
Emphasis:	50μs/15μs, on/off selectable
Analog inputs:	Digital Audio IN (x48): +4dBs (+24dBs max.) 10kΩ, or more, balanced, NK-27-31SL (x6) Analog Audio IN (x2): +4dBs (+19dBs max.) 10kΩ balanced, XLR type
Analog outputs:	Digital Audio OUT (x48): +4dBs (+24dBs max.) less than 100Ω load, balanced NK-27-32LS Analog Audio Out (x2): +48DBS (+19dBs max.) less than 100Ω load, balanced, XLR
Digital inputs:	AES/EBU: XLR SDIF-2 balanced: RS-422, D-sub 50 pin (x2) (24 channels per connector) SDIF-2 unbalanced: TTL level, 75Ω, BNC
Digital outputs:	AES/EBU: XLR SDIF-2 balanced: RS-422, D-sub 50 pin (x2) (24 channels per connector) SDIF-2 unbalanced: TTL level, 75Ω, BNC
Other inputs:	WORD SYNC IN (loop through): TTL level, 75Ω, unbalanced, BNC SECTOR SYNC IN (loop through): TTL level, 75Ω, unbalanced, BNC SYNC INPUT VIDEO: TTL level, 75Ω, unbalanced, BNC, COMPOSITE VIDEO, COMPOSITE SYNC and SQUARE WAVE REMOTE 1 IN: SRIF-1 format, TTL level, D-sub 37-pin REMOTE 3 IN: SRIF-3 format, RS-422, D-sub 50-pin TIME CODE IN: 0.5 TO 10Vp-p, 10kΩ, balanced, XLR SECTOR ADDRESS IN: TTL level, 75Ω, BNC EXT. SPEED CONTROL IN: ± 10V, 10KΩ, balanced, XLR EXT. PHASE CONTROL IN: ± 10V, 10KΩ, balanced, XLR
Other outputs:	WORD SYNC OUT (x2): TTL level, 75Ω, BNC SECTOR SYNC OUT (x2): TTL level, 75Ω, BNC TIME CODE OUT: 24Vp-p, 100Ω (PCM-3348), balanced, XLR SECTOR ADDRESS OUT: TTL level, 75Ω, BNC
Power requirements:	AC 100 TO 120V/220 TO 240V, 50/60Hz
Power consumption:	1.2kW
Dimensions (WxHxD):	916 x 997 x 740 mm (36⅛ x 39⅜ x 29¼ inches)
Weight:	246kg (543 lb)

Digital Audio Disk Recorder

DADR-5000



- 16 track hard disk-based recorder/player
- Digital "drop-in" replacement for analog mag sprocketed film recorder
- Selectable audio work length recording, 16, 20 and 24-bit
- 44.1 and 48kHz recording and all common pull up and pull down sample rates
- Continual audio playout between reverse play and 1.5 x play speed, digital audio output is maintained at the reference sample rate
- Sony (9-pin) serial transport control
- Chase from Biphase, LTC and VITC
- Synchronization selectable from: Word Clock, Video sync and AES/EBU reference
- Frame rates supported: 24, 25, 29ND, 29DF, 30ND, 30DF
- Multiple machine set up via the network control
- GPI interface for 16 channels track arming
- Input, disk and auto input monitoring
- AES/EBU digital as standard
- Analog I/O (optional) 24-bit converters
- Transport control keys, including: REW, FF, REV, PLAY, REC, and the JOG/SHUTTLE wheel
- High resolution audio bar graph meters
- LED display with control keys for menu data entry
- Selectable position display either Time Code or Feet/Frames
- Headphone monitor jack with level control

Optional Accessories

DABK-F5001 Sync Board
DABK-F5002 AD/DA Converter Board

Specifications

Format/Performance

Digital audio format:	16-/20-/24-bit linear PCM
Simultaneous recording:	16 channels
Simultaneous playback:	16 channels
Sample rates:	44.056 k, 44.1 k, 44.144 k, 47.952 k, 48 k, 48.048 kHz
Recording media:	3.5" hard disk
Recording time	

Rate:	16-bit	20-bit	24-bit
48kHz	42	34	28

(4 Gbytes HD, 16-ch)

Digital Audio Signal

Frequency response:	20 Hz to 20 kHz ±0.5 dB (48kHz)
Digital signal processing:	32-bit floating point
Dynamic range:	More than 144 dB internal processing
T.H.D.:	LESS THAN 0.005% AT 1 kHz, 23 dBu (-1dBFS)
Crosstalk:	Less than -90 dB at 1 kHz
S/N ratio:	A/D converter - More than 105 dB (20kHz BW) D/A converter - More than 100 dB (20 kHz BW) Analog In to Analog Out - More than 98 dB (20 kHz BW)
Wow and flutter:	Unmeasurable

Input/Outputs

Digital inputs:	16 ch, AES/EBU, D-sub 25-pin female (x1)
Digital outputs:	16 ch, AES/EBU, D-sub 25-pin male (x1)
GP input:	D-sub 37-pin female (x1)
GP output:	D-sub 25-pin male (x1)
Analog inputs (option):	+4 dBu balanced, more than 10 kΩ, D-sub 50-pin female (x1)
Analog outputs:	+4 dBu balanced, more than 10 kΩ, D-sub 50-pin male (x1)
AES reference:	D-sub 9-pin (x1)
Sync input (option)	
Video:	BNC type (x1)
Word:	BNC type (x1)
Timecode:	BNC type (x1)
VITC input (option):	BNC type (x1)
LTC input (option):	SMPTE/EBU timecode, RCA type (x1)
Bi-phase (option):	Hirose, 6-pin
Serial remote control (option):	Sony 9-pin
Frame rates:	24, 25, 29ND, 29DF, 30ND, 30 DF
Network control:	Token ring

Hardware

Display:	2 x 20 vacuum fluorescent
Channel assignment display:	2 per channel
Audio meters:	1-16 channels segment LED bars + clip indicator
Phones with volume control:	1 x 1¼" stereo phone jack

General

Power requirements:	AC 100V to 120V or AC 220V to 240V, 50/60 Hz
Power consumption:	240 W
Dimensions:	424 (W) x 177 (H) x 424 (D) mm (16¾ x 7 x 6¾ inches)
Mass:	17 kg (37 lb 8 oz)
Supplied accessories:	Rack ears kit (x1) Operation manual (x1) Accessory pack (x1)

SECTION 2

DAT Recorders

DAT Recorders with SMPTE Timecode

PCM-7040 2-Channel Digital Audio Recorder 2-1
- Specifications 2-1
- RM-D7100 Remote Controller 2-1

DAT Recorders

- PCM-R700 2-Channel Digital Audio Recorder 2-2
- PCM-R500 2-Channel Digital Audio Recorder 2-2
- PCM-R300 2-Channel Digital Audio Recorder 2-3

Portable DAT Recorders

- TCD-D10PROII Portable DAT Recorder 2-4
- PCM-M1 Portable DAT Recorder 2-5
- TCD-D8 Digital Audio Tape Player/Recorder 2-6
- SBM-1 Super Bit Mapping Adapter 2-6

2-channel Digital Audio Recorder with Timecode

PCM-7040

- Includes Time Code Reader/Generator, Digital I/O, Memory Start, RS-232C I/F, and Edit Memory
- Comprehensive Serial Remote Control 9-pin remote connector for convenient control from external equipment
- Start ID Level Sync Function enables the PCM-7040 to write a Start ID automatically each time the audio level rises from a period of silence and exceeds a selectable audio threshold
- Internal Clock for Time Date allows the automatic time-stamping of recordings. This date and time data can be read later from the tape on any PCM-7040
- Internal Synchronizer–The PCM-7040 recorder can be locked to a variety of external timecode and reference signals
- General Purpose Interfacing facility 37-pin connector provides an interface to the RM-D7100 remote control or to a synchronizer for remote control of transport functions. A DIN 8-pin connector accepts fader start/stop signals, providing recorder control from a mixing console.
- Subcode Recording
- Search/Locate Function–
  - Time Code Locate
  - Cueing
  - Start ID Search
  - Program Number and End ID Locate
  - Blank Search
- Input Signal Level Control
- Variable Speed Recording

Optional Accessories

RMM-30
Rack Mount Rail

RMM-31
Rack Mount Adaptor

RM-D7100
Remote Control

- Provides remote control of recorder transport fuctions of PCM-7040/7050/7030/7010 and PCM-2700A via 37-pin parallel interface

Specifications
PCM-7040

Tape Format/Performance

Recording system:	DAT Standard
Tape speed:	8.15 mm/s
Recording time:	124 minutes (with Sony PDP-125C)
Head system:	Helical scanning rotary 4-head system
Variable speed range:	±12.5% (playback)
FF and REW time:	Max. 60 s (with Sony PDP-125C)
Shuttle speed:	x±1/5, x±1/2, x±1, x±3, x±8, x±16 normal speed
Jog speed:	x±0 to x±1, x±3 normal speed

Digital Audio Signal

Number of channels:	2 channels
Sampling frequency:	48kHz, 44.1 kHz
Quantization:	16-bit linear
Error correction:	Double-encoded RSC (Read Solomon Code)
Frequency response:	20 Hz to 20 kHz ±0.5 dB
S/N ratio:	More than 90 dB
T.H.D.:	Less than 0.5% at reference level
Wow and flutter:	Below measurable limit
Cross talk:	Less than -80 dB (20 Hz to 20 kHz)
Emphasis:	50 µs/15 µs, switchable
Differential phase:	Within 10° (20 kHz)
Delay time:	Approx. 135 ms (RAW mode)

Input/Outputs

Analog inputs:	+4 dBs (+24dBs max.), 10k or 600Ω, balanced, XLR (x2)
Analog outputs:	+4 dBs (+24dBs max.), less than 50Ω, balanced, XLR (x2)
Digital inputs:	AES/EBU (with transformer), 110Ω, XLR
Digital outputs:	AES/EBU (with transformer), 20Ω, XLR
Time code inputs:	IEC461 (SMPTE/EBU), 0.5 to 10 Vp-p (10 kΩ), XLR
Time code outputs:	IEC461 (SMPTE/EBU), 2.4 Vp-p, XLR
Word sync inputs:	TTL compatible, 75Ω, Unbalanced, BNC type
Word sync outputs:	TTL compatible, low impedance, unbalanced, BNC type
Video sync inputs:	NTSC/PAL/SECAM or 50 Hz 60 Hz square wave, 0.3 to 4 Vp-p, 75Ω, unbalanced, BNC type
Parallel remote:	TTL compatible, D-sub 37-pin TTL compatible, DIN 8-pin
Serial remote:	RS-422, D-sub 9-pin
Computer I/F:	RS-232C, D-sub 25-pin
Monitor outputs:	-10 dBs, at less than 150Ω, RCA pin jack (x2)
Headphone outputs:	-26 dBs at reference level (8Ω load) stereo phone jack
Dimensions:	424 (W) x 132 (H) x 360 (D) mm 16″x 5″x 14″inches
Weight:	Approx. 10 kg (21 lb 1 oz)
Power requirements:	AC 120V ±10%, 60 Hz AC 230V +6/-10%, 50/60 Hz
Power consumption:	Approx. 38 W at AC 120 V Approx. 0.3 A at AC 230 V

2-Channel Digital Audio Recorder

PCM-R700

- 4-Head design for "Confidence Monitoring"
- High-reliability 4 D.D. mechanical transport mechanism with 4 direct drive motors has been incorporated for a stable tape run. The PCM-R500 is also equipped with Auto Head Cleaning for improved sound quality
- Flag (SCMS on/off)
- Easy operation with Jog/Shuttle Dial. Use the Shuttle for easy fast forward and rewind, or the Jog Dial for convenient AMS/Program Number search
- Setup menu permits selection of ID6, level sync threshold, date and more
- Supplied Din 8-pin parallel remote control interface and wireless remote control unit
- The Super Bit Mapping® recording function achieves a S/N ratio near to that of a 20-bit system
- Independent channel recording level volume controls to eliminate cross talk
- Fader In/Fade Out
- End ID Mark/Search

Supplied Accessories

Wireless Remote Control

2-Channel Digital Audio Recorder

PCM-R500

- High-reliability 4 D.D. mechanical transport mechanism with 4 direct drive motors has been incorporated for a stable tape run. The PCM-R500 is also equipped with Auto Head Cleaning for improved sound quality
- Flag (SCMS on/off)
- Easy operation with Jog/Shuttle Dial. Use the Shuttle for easy fast forward and rewind, or the Jog Dial for convenient AMS/Program Number search
- Setup menu permits selection of ID6, level sync threshold, date and more
- Supplied Din 8-pin parallel remote control interface and wireless remote control unit
- The Super Bit Mapping® recording function achieves a S/N ratio near to that of a 20-bit system
- Independent channel recording level volume controls to eliminate cross talk

Supplied Accessories

Wireless Remote Control

Specifications (PCM-R500/R700)

Recording section

Tape:	Digital audio tape
Recording head:	Rotary head
Recording time:	Standard: 120 minutes Long-play: 240 minutes (DT-120)
Error correction:	Double-encoded Reed Solomon code

Tape section

Sampling frequency:	48 kHz, 44.1 kHz, 32 kHz
Modulation system:	8-10 modulation
Number of channels:	2 channels, stereo
D/A conversion: (quantization)	Standard: 16-bit linear Long-play: 12-bit non-linear

Specifications continued

General section

Power requirements:	120V AC, 60 Hz (USA)
Power consumption:	34 W
Dimensions:	19 x 5¾ x 14 inches (not including rack mount adaptor)
Weight:	PCM-R500: Approx 7.2 kg (15 lb 14 oz) PCM-R700: Approx 7.3 kg (16 lb 2 oz)

Audio characteristics

Frequency response:	Standard: 20-20,000 Hz (±0.5 dB) Long-play: 20-14,500 Hz (±0.5 dB)
Signal-to-noise ratio:	90 dB or more (20 kHz LPF, A-Weight filter ON)
T.H.D.:	Standard: 0.05% or less Long-play: 0.3% or less (1 kHz, Reference level at 20 kHz LPF ON)
Wow and flutter:	Below measurable limit (±0.001% W. PEAK)

2-Channel Digital Audio Recorder

PCM-R300

- Super Bit Mapping® recording function achieving a S/N ratio near to that of a 20-bit system
- Start ID, End ID, Skip ID, controls
- Setup menu for preference section - selectable ID6 (SCMS on/off), level sync threshold
- Error rate display selectable in display mode
- Coaxial and optical digital interface
- A/D and D/A monitoring modes
- Recording and playback in long play mode
- Supplied rack mount adapter for rack mounting

Supplied Accessories

Wireless Remote Control
Rack mount adapter kit

Specifications

Digital Audio Signal Format

System:	DAT
Tape:	Digital audio tape
Digital audio channel:	2 channels, stereo
Sampling frequency:	48kHz, 44.1kHz, 32kHz
Quantization:	Standard: 16-bit linear Long-play: 12-bit non-linear
Error correction:	Double-encoded Reed Solomon code

Inputs/Outputs

Analog I/O (unbalanced):	RCA Phono, -12dBu
Digital I/O:	Optical jack Coaxial (RCA Phono)

General

Power requirements:	AC 120V, 60Hz (USA and Canada)
Power consumption:	30W
Dimensions:	Approx. 432(W) X 122(H) X 325(D)mm (17 1/8 x 4 7/8 x 12 7/8 inches)
Weight:	Approx. 5.0 (11 lb)

Portable DAT Recorder

TCD-D10PROII

- Easy-to-read LCD multi-function display
- Absolute time recording
- Balanced, switchable MIC/LINE inputs
- Built-in hours meter, microphone low-cut filter and microphone attenuator/limiter
- AES/EBU type digital I/O
- High-speed search using the ID recorded in subcode area
- Built-in speaker
- AC/DC operation — AC 100 to 240V with ACP-88 AC adaptor; DC 6V with NP-22H rechargeable battery pack

Supplied Accessories

Carrying Case
Shoulder Belt
NP-22H rechargeable battery packs (x2)
ACP-88 AC power adaptor
Charging adaptor
Digital I/O connecting cable
Remote controller
1/2 inch ↔ 3/8 inch microphone stand screw adaptor
1/2 inch ↔ 5/8 inch microphone stand screw adaptor

Specifications

Recording system:	DAT
Recording time:	120 min. (with Sony PDP-125C)
FF and REW time:	Approx. 60s
Error correction:	Double-encoded RSC
Sampling frequency:	Playback 32, 44.1, 48kHz Recording ANALOG IN: 48kHz AES/EBU DIGITAL IN: 32, 44.1, 48 kHZ
Quantization:	16-bit linear
Dynamic range:	More than 85 dB (1kHz, emphasis OFF)
Frequency response:	20~22,000 Hz ± 1.0 dB (LINE IN + 4dBs, LINE OUT - 10dBs)
Total harmonic distortion:	Less than 0.06% (1 kHz, LINE IN + 4dBs, LINE OUT - 10dBs, 30 kHz LPF)
Wow and flutter:	Below measurable limit
Analog inputs:	MIC/LINE IN (XLR x2) MIC: -60 dBs (-40 dBs with attenuator), 10kΩ balanced LINE: +4 dBs, 47kΩ, balanced
Analog outputs:	LINE OUT (phone x2) -10dBs, 700Ω, unbalanced HEADPHONE OUT (stereo phone x1) 20 mW + 20mW, 27Ω (load impedance 32Ω)
Digital I/O:	BALANCED (12-pin x1) Input impedance: 110Ω ±20% Input voltage: 200mV ~ 10V Output: 5V ±20% at 100Ω load
Built-in speaker:	5cm (2 inches) diameter
Power requirements:	DC 6V with NP-22H rechargeable battery pack AC 100-240V with ACP-88 AC power adapter
Battery life:	Approx. 1.5 hours continuously with a fully charged NP-22H
Dimensions:	253(W) x 55(H) x 191(D) mm 2.0 kg (4lb 7oz) with NP22H 1.8 kg (4lb) without NP-22H

Portable DAT Recorder

PCM-M1

- New compact transport is 20% smaller and weighs 25% less than the TCD-D8
- Designed for professional use with circuitry allowing manual control of ID 6 (SCMS on/off)
- 3.5 hours of recording time with supplied Ni-MH batteries
- Provides 2.5 hrs of playback operation with alkaline batteries, 30% lower power consumption than the TCD-D8
- Improved microphone circuitry (the same mic amplifier used in the SBM-1)
- Recording margin indicator allows user to monitor peak levels during recording

Specifications

Recording/playback time (with 120 min. tape):	Standard: 120 min., Long-time mode: 240 min.
Sampling frequency:	48kHz, 44.1kHz (Standard), 32kHz (Long-Time Mode)
Bit-stream:	16 bit linear (Standard),12 bit non-linear (Long-Time Mode)
Frequency response:	48kHz: 20 - 22,000Hz± 1dB, 44.1kHz: 20 - 20,000Hz± 1dB, 32kHz: 20 - 14,500Hz± 1dB
Wow & flutter:	Below measurable limits
S/N ratio:	More than 87 dB
Harmonic distortion:	Below 0.008% (In Standard Mode)
Input jacks:	MIC/LINE IN (Stereo mini jack, plug-in-power compatible) x1, headphone remote control input (4-pin comb type) x1
Digital in/out:	7-pin connector jack (remote control compatible)
Maximum headphone output:	15mW + 15mW
Power consumption:	900mW
Power supply:	Nickel metal hydride rechargeable battery (NH-D100 supplied) x2, AA battery (optional) x2, external power supply (DC4.5V, AC120V) with supplied adapter
Battery life for Ni-MH battery:	Continuous recording: Approx. 3 hr. 30 min. (without recording monitor) Continuous playback: Approx. 2 hr. 30 min.
Recharging time for Ni-MH battery:	Approx. 2 hr. 30 min. (complete recharge)
Maximum external dimensions (W x H x D):	80 x 117.3 x 29.2mm (not including projecting parts)
Weight:	Approx. 290g (main unit only)
Supplied Accessories:	Ni-MH rechargeable battery (NH-D100) x2, rechargeable adapter, AC adapter, cleaning cassette, carrying case

Portable DAT Recorder

TCD-D8

- 48kHz/44.1kHz/32kHz sampling frequency are selectable for both digital and analog recording
- Long play mode for up to 4 hours of recording and playback
- 4 hours recording with 4 "AA" alkaline batteries
- Automatic date function for fast identification of recording
- Automatic and manual recording level adjustment
- Anti-Shock mechanism for reliable recording and playback
- Large backlit display with 4-segment battery indicator
- Automatic/Manual subcode entry
- 100X high speed Automatic Music Search Feature
- 2 Speed (3X/25X) Cue/Review
- Digital input and output
- The TCD-D8 incorporates the Serial Copy Management System which will not prevent you from making a direct-to-digital copy from a digital source, but will prevent a second digital-to-digital copy to be made from such copies.

Supplied Accessories

Carrying Case
AC-E60HG AC Adaptor

Optional Accessories

SBM-1
Super Bit Mapping Adaptor for TCD-D8

- Built-in 20-bit AD converter for high quality recording
- Digital Input/Output capability for both optical & coaxial cables
- 4 hour operation with 4 "AA" alkaline batteries
- Manual recording level control
- LED battery indicator

RMT-D100
Wired Remote Commander®

RM-D100K
System Adaptor Kit

RK-DA10P
Digital Cable

ECM-MS957
Stereo Microphone

AC-E60HG
AC Adaptor

DT-10CLD
Cleaning Tape

Specifications

Tape:	Digital Audio Tape
Recording time:	Standard 120 minutes Long play mode: 240 minutes (with DT-120)
Sampling frequency:	48 kHz, 44.1 kHz, 32 kHz
Frequency response:	
Standard:	Fs 48 kHz, 20-22,000 Hz (±1.0 dB) Fs 44.1 kHz, 20-20,000 Hz (±1.0 dB) Fs 32 kHz, 20-14,500 Hz (±1.0 dB)
Long-play mode:	Fs 32 kHz, 20-14,500 Hz (±1.0 dB)
Signal to noise ratio:	
Standard:	more than 87 dB
Long-play mode:	more than 87 dB (1 kHz IHF-A, 22 kHz LPF, LINE IN)
Dynamic range:	
Standard:	more than 87 dB
Long-play mode:	more than 87 dB (1 kHz IHF-A, 22 kHz LPF, LINE IN)
T.H.D.:	
Standard:	less than 0.006% (1 kHz,22 kHz LPF, LINE IN)
Long-play mode:	less than 0.09% (1 kHz,22 kHz LPF, LINE IN)
Wow and flutter:	Below measurable limit (less than ±0.001% W. PEAK)
Inputs:	Mic: Stereo minijack
	Line in: Stereo minijack
Outputs:	Phones: Stereo minijack 27ohms impedance
	Line out: Stereo minijack, 27 ohms impedance
Power Requirements:	DC in 6V

SECTION 3

Analog Cassette Recorders

TCW-R565RM Dual-Well Cassette Deck.....3-1
TC-D5PROII Portable Cassette Recorder.....3-1

Dual-Well Cassette Deck

TCW-R565RM

- RMS for convenient programmed play and editing – up to 28 songs (14 per side) can be programmed for playback on Deck A. When this function is in use, the level meter functions as a music calendar
- Auto Calibration – this smart feature automatically adjusts recording conditions to match tape characteristics, setting recording levels in accordance with bias levels and tape sensitivity
- Multi-AMS – included on both decks, Multi-AMS helps you find the song you want as easily as with a CD player. This feature offers playback from the beginning of up to 30 songs
- Dolby® B/C and Dolby® HX Pro – Dolby® noise reduction systems ensure high-quality recordings without unwanted hiss noise
- Pitch control (master deck A) +/-30%
- Supplied rack mount adaptor for rack mounting

Supplied Accessories

Audio connecting cords (2 phono plugs - 2 phono plugs) (x2)
Rack mount kit

Optional Accessories

Remote Commander® RM-J902

Specifications

Recording system:	4-track 2-channel stereo
Fast-winding time (approx.):	90 sec. (with Sony C-60 cassette)
Signal-to-noise ratio (at peak level and weighted with Dolby NR off):	(HIGH): 57 dB, (METAL): 58 dB
S/N ratio improvement: (approx. values)	
With Dolby B NR on:	5 dB at 1 kHz, 10 dB at 5 kHz
With Dolby C NR on:	15 dB at 500 kHz, 20 dB at 1 kHz
Harmonic distortion:	0.4% (NORMAL), 1.8% (METAL)
Frequency response Dolby NR off:	(METAL): 30-18,000 Hz, (±3db, IEC designation)
Wow and flutter:	0.08% W. RMS (NAB)
Variable pitch range (approx.)	-30 to +30%
Power requirements:	120 V AC, 60 Hz
Power Consumption:	26 W
Dimensions (approx.):	(17 x 4⅞ x 11½ inches) including projecting parts and controls
Mass: (approx.)	4.5 kg (9 lbs 15 oz)

Portable Cassette Recorder

TC-D5PROII

- Reliable mechanism including disc-drive capstan-servo tape transport with coreless motor
- Powered by two "D" size batteries; operates also on AC with the addition of optional AC-D4HG AC adaptor
- Compact unit
- XLR microphone inputs

Supplied Accessories

Connecting cable
Carrying case and shoulder strap

Specifications

Recording system:	4-track 2-channel stereo
Fast-winding time:	Approx. 150 sec. (with Sony C-60 cassette tape)
Frequency response (Dolby NR off):	FeCr cassette (TAPE SELECT: TYPE III) 40-16,000 Hz, ±3db (NAB) CrO_2 cassette (TAPE SELECT: TYPE II) 40-15,000 Hz, ±3db (NAB) Standard cassette (TAPE SELECT: TYPE I) 40-14,000 Hz, ±3db (NAB)
Signal-to-noise ratio (Dolby NR off):	58dB metal 56dB CrO_2
Total Harmonic distortion:	0.9% (CrO_2 cassette)
Wow and flutter:	0.06% (WRMS), ±17% (DIN)
Bias frequency:	85kHz
Inputs:	MIC (Cannon) XLR-3-31 type x 2) 0.28mV, balanced, for low-impedence microphone with Cannon XLR-3-12C type connector
Outputs:	LINE (Phono jack x 2) Output level 0.44V, less than 4.7k ohms HEADPHONES (Stereo phone jack x 1) 20mW + 20mW at 10% harmonic distortion, load impedance 8 ohms, for low-impedance headphones
Built-in speaker:	Approx. 5cm (2") dia., 200mW (at 10% harmonic distortion, DC operation)
Power requirements:	DC3V, two "D" size (IEC designation R20) batteries DC12V car battery with DCC-127A car battery cord (optional) AC110, 120, 220, 240V, 50/60Hz with AC-D468 AC adaptor (optional)
Battery life:	Approx. 4.5 hours with "D" size LR20 batteries Approx. 2.5 hours with "D" size R20 dry batteries
Dimensions (approx.):	(9⅝ x 1 15/16 x 6⅝ inches) including projecting parts and controls
Weight (approx.):	1.7 kg (3 lbs 12 oz) with batteries

Powered Near-Field Monitor

SMS-1P/B

- 10cm full range bass reflex speaker system
- 2 Types of mixable Inputs – Input 1: pin jack, or phone jack– Input 2: XLR connector (balanced), or phone jack allows for mixing of two sources, such as a monitor and talkback. Both sets of inputs are independently controlled so that sound levels can be mixed together
- Magnetically Shielded Speaker Unit – a 10cm full-range speaker unit has been included, complete with a canceling magnet and large-size shield to avoid interference with video monitors
- Large heat sink and built-in power amp with 15W power output, the power amp boasts a durable design capable of long hours of use. An independent buffer amp has been included for each input, providing superior sound quality. The buffer amp and power amp each has its own power supply, preventing mutual interference.
- Bass and Treble controls
- Mounting Capabilities – two 5mm nut holds (pitch 60mm) on the bottom of the speaker system allow mounting "third party" brackets

Specifications

Dimensions:	Approx. 132 x 210 x 102mm (W x H x D) Approx. 5 3/16 x 8 5/16 x 8 11/16 in. (W x H x D)
Weight:	Approx. 7lbs./3.2kg
Output power:	15W

Powered Near-Field Monitor

SMS-1P/B

- 10cm full range bass reflex speaker system
- 2 Types of mixable Inputs – Input 1: pin jack, or phone jack– Input 2: XLR connector (balanced), or phone jack allows for mixing of two sources, such as a monitor and talkback. Both sets of inputs are independently controlled so that sound levels can be mixed together
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Specifications

Dimensions:	Approx. 132 x 210 x 102mm (W x H x D) Approx. 5 3/16 x 8 5/16 x 8 11/16 in. (W x H x D)
Weight:	Approx. 7lbs./3.2kg
Output power:	15W

Background Speaker System

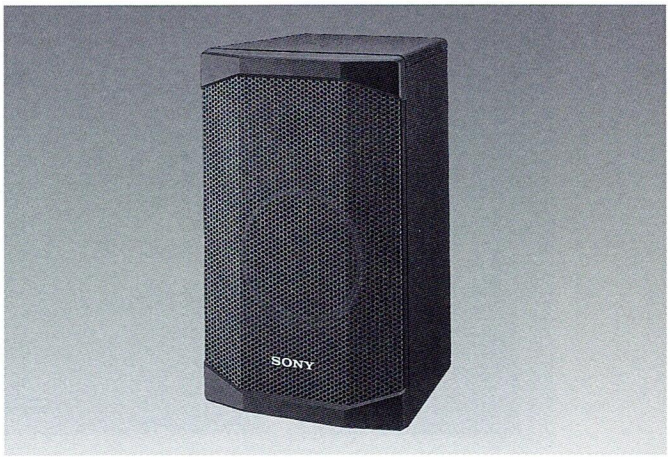
SRP-S320W

SRP-S320W Speaker System (sold in pairs)

- Background music speaker
- 50 watts rated power
- Clear reproduction of bass frequencies from a compact bass-reflex enclosure with twin ducts
- Molded cabinet for excellent durability and light weight
- Internal protection circuit

Foreground Speaker System

SRP-S720



SRP-S720 Speaker System

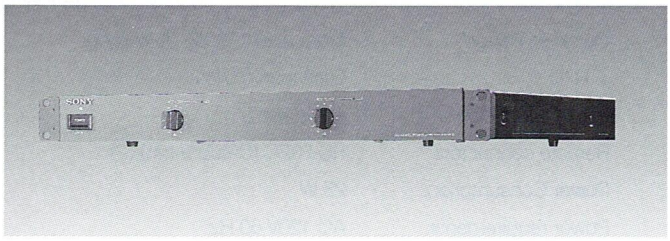
- Foreground music speaker
- 100 watts rated power
- 20 cm diameter woofer and horn-type tweeter, installed in bass-reflex enclosure provide strong mid/bass and clear treble
- Horizontal or vertical mounting
- Trapezoid cabinet design with punched metal speaker grille
- Internal protection circuit

Specifications

	SRP-S320W	SRP-S720
Speaker system	1-way bass-reflex	2-way bass-reflex
Speaker units	Cone type 12 cm (5 inches) x1	Woofer: Cone type, 20 cm (8 inches) x1 Tweeter: Horn type x1
Rated Impedance (ohms)	8	8
Rated input power (W)	50	110
Max. input power (W)	150	300
Sensitivity (dB/w/m)	89	92
Effective frequency range (Hz)	75-17,000	50-20,000
Input terminal	Push terminal	Push terminal
Dimensions W/H/D (mm) (inches)	Approx. 220/144/160 $50^{3}/_{8}$ / $5^{3}/_{4}$ / $6^{3}/_{8}$	Approx. 1280/450/255 $11^{1}/_{8}$ / $17^{3}/_{4}$ / $10^{1}/_{8}$
Weight (kg)	Approx. 2 (4 lb 7 oz.)	Approx. 8 (17 lb 10 oz.)

Power Amplifier

SRP-P50



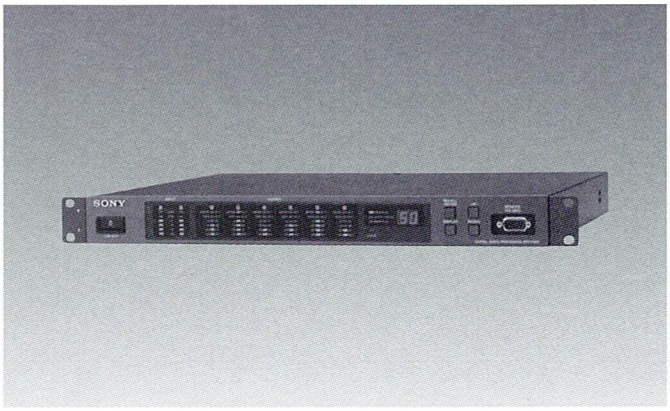
- Offers a power output of 70W + 70W (4Ω load)
- Compact 1U-size body
- Toroidal transformer
- BTL connection
- Symmetrical circuit high supply voltage rejection ratio and stability
- Use of a coupling condenser made of silk fiber provides wide dynamic range
- Input level switchable between OdBu and – 10dBu

Specifications

	SRP-P50	
Input Type	**Balanced**	**Unbalanced**
Input Impedance	more than 20kΩ	
Input Connector	XLR-3-31 type / Phono jack	
Operation	**STEREO**	**MONO**
Speaker Terminal	Screw type	
Rated Output Power	75W+75W(4Ω) 50W+50W(8Ω)	150W(8Ω)
Frequency Response	20Hz-20kHz +0dB/-0.5dB	
Input Sensitivity	0dBu/-10dBu selectable: 55W+55W(8Ω)	
T.H.D.	less than 0.05% (50W+50W) (8Ω) less than 0.1% (70W+70W) (4Ω)	less than 0.1% (150W, 8Ω)
Residual Noise Voltage	less than 120μ V.	less than 240μ V.
Operating Temperature	0 – +40 degree	
Stage Temperature	-20 – +60 degree	
Power Requirement	120V 60Hz	
Power Comsumption	160W	
Mass	8kg (17 lb 10 oz)	
Dimensions	482 / 44 / 350 mm 19 x 1 3/4 x 13 7/8 inches	

Digital Audio Processor

SRP-F300



The SRP-F300 is a 2-CH digital crossover with high performance 24-bit A/D D/A 96 kHz sampling. It excels in wide range SR applications from medium size spaces such as banquets, conference rooms to large venues such as hall, theater, gymnasium and stadium. It's 1U high and incorporates PC control interface.

- Highly accurate audio signal conversion with 24-bit linear quantization and 96kHz sampling frequency
- Digital input AES/EBU available in both 48k and 96kHz, Each input signal can be assigned to each of 6 analog outputs
- External PC control via RS-232C interface
- Multiple F300s can be daisy chained using RS-232C interface on front or rear panels
- Control software is supplied for Windows® 95
- Recall (Enter), DISPLAY and UP/DOWN buttons are provided on front panel.
- -40/-2-/-10/-6/OVER level meter on each input/output channel. On the right side of LED IN1/IN2/HF/MF/LF/SLF are printed to indicate x-over assignment
- Signal processing algorithms IN-(X2)PEQ 11, COMP/31 GEQ.

  Output (x6) LPF-HFP-PEQ-LEVEL-PEAK LIMITER-DELAY-PHASE-MUTING
- Up to 50 programs can be memorized
- Mountable in 19-inch EIA standard rack 1U size high

Specifications

Frequency Response:	20 Hz-20 kHz ±0.5 dB (48kfs)
	20 Hz-40 kHz +0.5 dB / -3.0 dB (96kfs)
Dynamic Range:	More than 110 dB (A-weight)
T. H. D.:	Less than 0.01%
Min. signal delay time:	880 µ sec
Remote connectors:	RS-232C (D-sub 9-pin) (2)
Power Consumption:	25 W
Power requirements:	AC 120V 60 Hz
Dimensions:	482(W) x 44(H) x 360(D) mm
Mass:	Approx. 5.2 kg

INPUT

	No. of CH	Ref. Level	Max. Level	Impedance	Connector
Analog	2	+4 dBu	+24 dBu	10 k Ω	XLR-3-31
A/D	-	96 kHz 24-bit			
Digital	1	AES/EBU sampling 32-96 kHz			XLR-3-31

OUTPUT

	No. of CH	Ref. Level	Max. Level	Impedance	Load Impedance	Connector
Analog	6	+4 dBu	+24 dBu	47 Ω	More than 600 Ω	XLR-3-32
D/A	-	96 kHz 24-bit				

Supplied Accessories

Protocol manual (Floppy disc)
Control software (Floppy disc)
Connector cap (1)
Power cord (1)

SECTION 5

MiniDisc Recorder/Players

MDS-B5/MDS-B6P MiniDisc Recorder/Player 5-1
MDS-E11 MiniDisc Recorder/Player 5-2
MDS-E58 MiniDisc Recorder/Player 5-2
MXD-D3 CD/MiniDisc Recorder 5-3
MDS-JE630 MiniDisc Recorder 5-4
MZ-B3 MiniDisc Portable Recorder 5-5
MZ-R55CG Portable MiniDisc Recorder/Player 5-6

MiniDisc Recorder Player

MDS-B5/B6P

- Durable BSL spindle motor provides reliable long-term operation
- Multi-Access hot start of up to 10 tracks by using the supplied Remote Commander, personal computer type keyboard parallel remote port, or via RS-232C
- Up to 148 minutes of monaural recording (MDS-B5)
- Next Track Selection lets you select the next track for playback while listening to the current selection
- MDS-B5/B6 work with a wide variety of remote interface devices, such as a personal computer keyboard, RS-232C, GPI and the supplied RM-DC2 remote control
- Direct duplication link for copying compressed signals (MDS-B5) enables making a clone of both audio and text at high speeds. This technology is also effective for eliminating fragmentation on heavily edited discs
- RAM-TOC Edit lets you edit a disc in a temporary RAM buffer before you decide whether or not to save your edited recording to a master disc. Also allows temporary editing of a pre-mastered disc
- ±12.5% Vari-Speed

Supplied Accessories

Wired remote controller (x1)
Connecting cable (x1)
Keyboard template (x1)
AC power cord (x1)
Operational manual (x1)

Optional Accessories

Personal Computer Keyboard (available elsewhere)

Specifications

General

Power requirements:	AC 120 V, 60 Hz (USA & Canada)
Power consumption:	30 W
Dimensions:	8 3/8 x 5 1/2 x 14 7/8 inches
Weight:	Approx. 5 kg (11 lb)

Digital audio signal format

System:	MiniDisc digital audio system
Disc:	MiniDisc
Modulation format:	EFM (Eight to Fourteen Modulation)
Digital audio channel:	2 channels, 1 channel
Sampling frequency:	44.1 kHz
Error correction:	ACIRC (Advanced Cross Interleave Reed Solomon Code)

Input connectors

Analog input:	(MDS-B5 only)
Connector:	XRL-3, FEMALE
Reference level:	+4 dBs (factory setting), (+4 dBs to - 12dBs)
Digital input (Coaxial):	
Connector:	RCA Phono
Digital input (AES/EBU)	
Connector:	XLR-3, female

Output connectors

Analog output (Line):	
Connector:	XRL-3, FEMALE
Output impedance:	Aprox. 150 ohms, balanced
Reference level:	+4 dBs (factory setting), (+4 dBs to - 12dBs)
Digital output (Coaxial):	
Connector:	RCA Phono
Output impedance:	75 ohms
Digital output (AES/EBU)	
Connector:	XLR-3, male
Input impedance:	20 ohms, balanced

Remote connectors

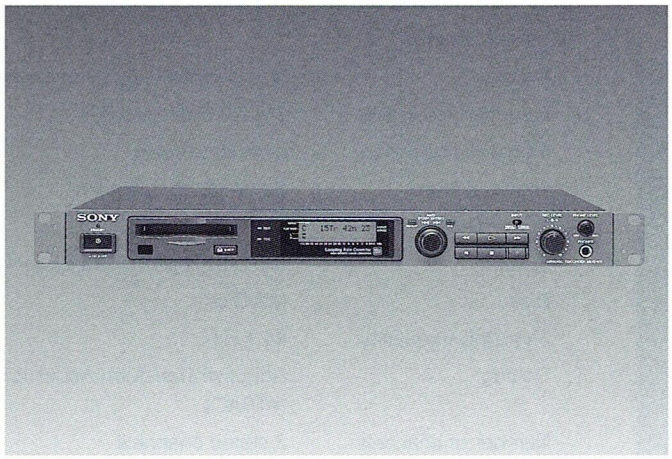
Remote (25P)	
Connector:	D-SUB 25-pins (female)
Format:	Parallel

Audio characteristics

Frequency response:	20 Hz to 20 kHz, ±0.5 dB
Signal-to-noise ratio:	More than 88 dB (A-weight recordable disc) More than 95 dB (A-weight premastered disc)
Total harmonic distortion:	Less than 0.05%
Wow and flutter:	Below measurable limit (±0.001%, W.Peak)

MiniDisc Recorder/Player

MDS-E11



- Wide Bit Stream technology
- Analog XLR Balanced In/Out
- Coaxial Digital I/O
- Sequential Record/Playback functions via relay interface
- Precision sample rate converter
- Control-S jack for optional wired remote
- RS-232C and parallel interface
- Up to 148 minutes of mono recording/playback time
- Fully-featured TOC EDIT functions, including UNDO, DIVIDE and COMBINE
- Timer Playback and recording using an external timer
- CD Synchro record
- Auto pause function

Specifications

	Connector type	Input impedance	Rated input	Maxium input
INPUTS				
Analog Line In	Phono XLR-3-31	47 kΩ More than 10 kΩ	-4 dBu +4 dBu	+12 dBu +24 dBu
Digital Coaxial In	Phono	75Ω	0.5 Vp-p ±20%	
OUTPUTS		Rated Output	Load Impedance	
Phones	Stereo phone	0-10 mW The level varies	32Ω	
Analog Line Out	Phono XLR-3-32	Maximum +8 dBu +10/+24 dBu (switchable)	More than 10 kΩ More than 600Ω	
Digital Coaxial Out	Phono	0.5 Vp-p (at 75Ω)	75Ω	

MiniDisc Recorder/Player

MDS-E58

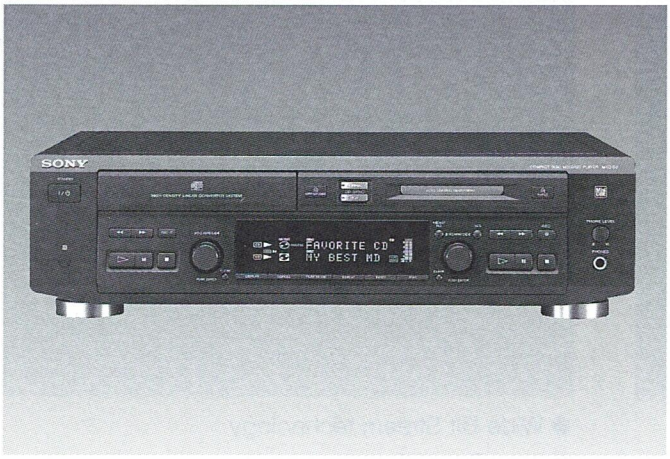
- Wide Bit Stream technology
- Auto Pause function
- Precision sample rate converter
- Control-S jack for wired remote option (RM-D5ME)
- Coaxial and Optical Digital I/O
- Up to 148 minutes of mono recording/playback time
- Fully-featured TOC EDIT functions including UNDO, DIVIDE and COMBINE
- Easy-to-use versatile recording functions including the CD Sync
- Music Sync and Time-machine recording
- Music Scan function for quick track location

Specifications

INPUTS	Connector type	Input impedance	Rated input	Maxium input
Analog Line In	Phono	47 kΩ	-4 dBu	+12 dBu
Digital Optical In	Square optical connector	Optical wave length: 660nm		
Digital Coaxial In	Phono	75Ω	0.5 Vp-p ±20%	
OUTPUTS		Rated Output	Load Impedance	
Phones	Stereo phone	0-10 mW The level varies	32Ω	
Analog Line Out	Phono	Maximum +8 dBu	More than 10 kΩ	
Digital Optical Out	Square optical connector	Optical power -18 dBm	Wave length: 660 nm	
Digital Coaxial Out	Phono	0.5 Vp-p (at 75Ω)	75Ω	

CD/MiniDisc Recorder with High Speed Dubbing

MXD-D3



- High speed CD to MD with 4x dubbing capability
- 20-bit A/D with hybrid pulse D/A converter
- Wide Bit Stream
- Sampling rate converter
- Optical digital input
- Large, twin-line display
- Dual transport
- Convenient dual jog dial
- Digital record level control
- Advanced time shift recording
- Music synchro recording
- Smart space recording
- Remote Commander® remote control
- Edit functions: combine, divide, move, erase, A-B erase, undo, track marking

Specifications

CD player section

System:	Compact Disc digital audio system
Frequency response:	5 to 20,000Hz ±0.5dB
Signal-to-noise ratio:	more than 96dB
Wow & flutter:	Below measurable limit

MD deck section

System:	MiniDisc digital audio system
Disc:	MiniDisc
Sampling frequency:	44.1 kHz
Coding:	Adaptive Transform Acoustic Coding (ATRAC)
Number of channels:	2 stereo channels
Frequency response:	5 to 20,000Hz ±0.5dB
Signal-to-noise ratio:	over 98dB during playback
Wow & flutter:	Below measurable limit

Input:

	Jack type	Input impedance	Rated input Minimum input
LINE (ANALOG) IN	Phono jacks	47 kilohms	500 mVrms125 mVrms
DIGITAL OPTICAL IN	Square optical connector jack	Optical wave length 660 nm	— —
Outputs:			
	Jack type	Rated output	Load impedance
PHONES	Stereo phone jack	10 mW	32 ohms
LINE (ANALOG) OUT	Phono jacks	2 Vrms (at 50 kilohms)	Over 10 kilohms
General:			
Power requirements	120 V AC, 60 Hz		
Power comsuption	20 W (less than 1 W at standby)		

Dimensions (approx.) (w/h/d) incl. projecting parts and controls 430 x 120 x 290 mm

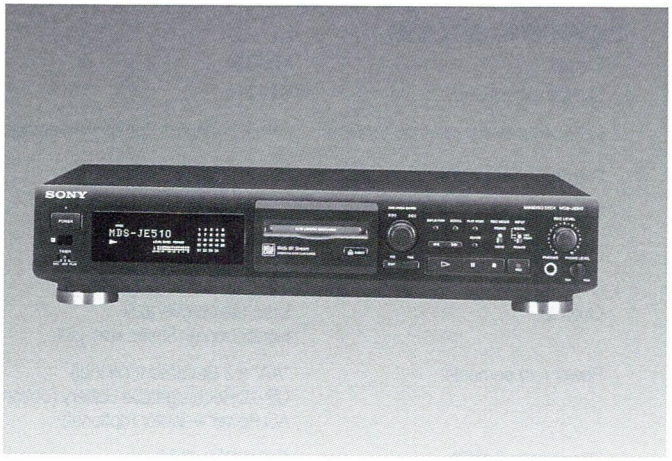
Mass (approx.) 4.7 kg

Supplied Accessories

Remote commander
Audio connector cables
Optical cable
"AA" Batteries (x2)

MiniDisc Recorder

MDS-JE630



- CD text and custom file transfer
- PC keyboard input for disc and track names
- Wide Bit Stream technology
- 24-bit Analog-to-Digital converter
- Jog dial for track selection, text entry
- Digital record level control
- Two-line fluorescent display
- 2 optical digital inputs, 1 output
- Playback pitch control
- Latest generation ATRAC circuitry

Specifications

Record/playback time:	Stereo 74 minutes
Record/playback time:	Monaural 148 minutes
Sampling frequency:	44.1 kHz
Frequency response:	5 - 20,000Hz ±0.3dB
Dynamic range:	>96dB
Signal-to-noise ratio:	>96dB
Harmonic distortion:	Playback <0.004%
Wow & flutter:	Unmeasurable
Input jacks:	Line: Phono Optical: 2 Square
Outputs:	Line: Phono Optical: Square Headphone: Phone
Power consumption:	17W
Dimensions (WHD):	17" x 3 3/4" x 11"
Weight:	(7lb 8oz)

MiniDisc Portable Recorder

MZ-B3

- Built-in monaural microphone and speaker provides for convenient recording capability and excellent sound quality to monitor playback
- Digital VOR (Voice Operated Recording) permits activation of the recorder only when the VOR senses audible sound, to conserve space on the disc and eliminate soundless pauses during playback
- High speed playback makes it faster to review recordings
- Automatic date and time function
- Stereo or monaural recording (74 or 148 minutes respectively)
- Quick access feature provides for instant access to an individual recording on the disc
- New position pointer with graphic display provides a visual indication of where you are on the MiniDisc

Specifications

Format:	MiniDisc
Sampling frequency:	44.1 kHz
Data compression method (coding):	ATRAC Adaptive Transform Acoustic Coding
Frequency response:	20 - 20,000Hz ±1dB
Wow & flutter:	Unmeasurable
Inputs:	DC in 4.5V Mic: Stereo mini jack
Outputs:	Line: Stereo mini jack Headphones: Stereo mini jack
Power requirements:	"AA" x 3 Batteries (optional) UP-12 Rechargeable Battery (optional) AC Power Adaptor (optional)
Dimensions (HWD):	5 1/4" x 1 1/8" x 3 1/8" (135.3 x 30 x 80.5mm)
Weight:	15 1/2 oz. (440g) with batteries

Supplied Accessories

Remote Control for Recording, Track Marker and Pause
Rechargable Battery Case for LIP-12
Carrying Case
MDW.74 Recordable MiniDisc

Optional Accessories

MDW-74A
Recordable Minidisc

AC-E45HG
AC Adaptor

ACP-MZ60A
Worldwide AC Adaptor/Quick Charger
LIP-12 Rechargeable Battery

Portable MiniDisc Recorder/Player

MZ-R55CG

- World's smallest recording MD Walkman® stereo
- New Smart Remote Control includes editing functions like titling and move
- Backlit LCD on headphone remote
- 40 second shock resistant memory
- NIMH Rechargeable battery and charger supplied
- Character input for titling while recording
- Date & Time Stamp
- Digital Synchro Recording
- Sampling Rate Converter
- Powerful Digital Mega Bass® Sound Systems with e-position switch
- High quality recording with Digital AGC

Specifications

Frequency response: (Hz)	20 to 20,000 ±3 dB
Input/Output jacks:	DC IN 3.0 V, LINE/Optical (Digital) IN x1, LINE OUT x 1, Headphones x 1, MC x 1 (Plug-in-Power)
Estimated PB time in hours	
AA Akaline batteries:	10 (PB) 5 (REC)
Rechargeable battery:	NH-14WM (supplied)
Batteries:	AA x 2 (optional)
AC adaptor	
(AC 100 to 240 V, 50/60 Hz):	AC-MZR55 (supplied)
Dimensions (W x H x D)	
max., in mm:	78.9 x 18.9 x 84
Weight (g):	147 (main unit only)

Supplied Accessories

ACP-MZ60A AC Power Adapter
LIP-12 Lithium Battery
Stereo Headphones
AA Battery Case
Carrying Case

Optional Accessories

POC-15AB/POC-15B
Optical Digital Cables

ECM-MS957
Stereo Microphone

DCC-E260HG
Car Battery Cord

SECTION 6

CD Players

CDP-3100 CD Player System....6-1
CDP-D500 CD Player....6-2
CDP-11 CD Player....6-3
CDP-CX300 CD Changer....6-4
CDP-XE500 CD Player....6-5

CD Player System Capable of 9-pin Serial Control

CDP-3100

- 18-bit D/A conversion system with 8 times oversampling provides excellent sound quality and an outstanding dynamic range
- Jog Search Function allows quick and precise location of a desired location*
- Preview 'END' and 'BEGIN' Functions. The END REHEARSAL function plays back the last 15 seconds of a selected track. The BEGIN REHEARSAL function makes it possible to playback from the beginning of a track.
- Three timer modes: Remaining Time, Actual Time and Set Time are selectable*
- Variable Speed Playback ±12.5%*
- AMS (Auto Music Sensing) Function
- 1 Cue Point Memory / Last Cue Memory Functions*
- Fader Start Function
- Three alternative player modes*
- End of Track Alarm Function
- Single play mode and index mode*
- Compact size
- Accommodates 8cm (3-inch) and 12cm (5-inch) CDs

**Requires CDS-3100 and/or DABK-3101 options*

Optional Accessories

DABK-3101

Memory Board provides instant memory start and a memory JOG function with an accuracy of one CD frame

DABK-3102

Interface board which allows direct control from a video editor via a 9-pin serial remote connector. AES/EBU digital output, reference video sync input, word sync input, D-I sync input and timecode signals are also provided. Internal sample rate convertor provides 48k output for direct digital interface to digital video oriented production systems

CDS-3100 Compact Disc Player Remote Control

Search precision:	1 CD frame (13.3ms)
Headphone output:	Maximum 0dBu (32Ω)
Weight:	Approx. 700g (1lb 9 oz)
Dimensions:	106 (W) x 58 (H) x 220 (D) mm (4 (W) x 2 (H) x 8 (D)) inches
Supplied accessories:	Connecting cable (2m) (1)

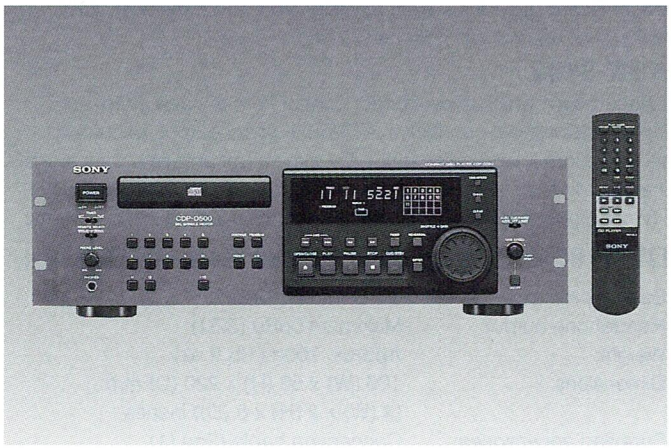
SECTION 6

Specifications

Number of channels:	2 (stereo)
Readout system:	Non-contact optical system using semiconductor laser pick-up
Rotational speed:	Between approx. 200 rpm (outer circumference) and 500 rpm (inner circumference)
Error correction:	Sony super strategy cross interleave Reed Solomon Code (CIRC)
D/A conversion:	18-bit 8 times oversampling
Frequency response:	20Hz to 20,000Hz +0.5dB/-1.0dB (maximum output levels)
Harmonic distortion:	Less than 0.01%
Wow and flutter:	Below measurable limit
Crosstalk:	88dB
Variable speed:	±12.5%
Outputs:	LINE OUT: Balanced, XLR (x2) nominal +4dBu (600Ω), maximum + 19dBu (600Ω) MONITOR OUT: Unbalanced, RCA pin jack (x2) nomimal -10dBu (47kΩ), maximum +5dBu (47kΩ) DIGITAL OUT: AES/EBU, XLR (x1) HEADPHONE OUT: Maximum 0dBu (32Ω)
Parallel remote connector:	DIN 8-pin type
CDS-3100 Remote control I/F:	10-pin
Power requirements:	AC 120V, 50/60 Hz
Power consumption:	35W
Dimensions:	212(W) x 118(H) x 408(D) mm 8(W) x 4(H) x 16(D) inches
Weight:	Approx. 6.5 kg (14lb 5oz)

CD Player

CDP-D500



- Jog Shuttle Dial for CD frame accurate cueing
- Cue to either track or index point
- Cue/Standby mode
- RS-232C interface for computer control and CD text information
- Direct track access on front panel
- Integral Rack Mount
- Adjustable Auto Fade In/Out 1~9 Seconds
- Accommodates both 8cm (3-inch) and 12cm (5-inch) compact discs
- Synchronize to external word clock
- Built-in digital outputs conforming to the AES/EBU and unbalanced (IEC-958) formats
- 8-pin DIN remote control interface connector for enabling fader start/stop from a mixing console
- Auto cue playback for rapid start from a point where audio is first detected at the beginning of a track
- Variable speed playback (±12.5% in 0.1% steps)
- Various playback modes including Program Play

Supplied Accessories

Wireless Remote Control

Specifications

Frequency response:	5Hz-20kHz(+0.3dB at 10kohm Load)
Signal-to-noise ratio:	More than 100db (20kHz LPF IHF-A weighted)
Dynamic range:	More than 98dB
THD:	Less than 0.004% (at 1kHz 0dB 20kHz LPF)
CH separation/ input/outputs:	More than 100dB (at 1kHz~20kHz LPF)

Analog output:

	XLR	RCA Pin	Headphone (RCA Phone)
Output impedance:	100ohm	200ohm	150ohm
Maximum output level:	+24dBs	+9dBs	15mV
Load impedance:	10kohm	10kohm	32ohm

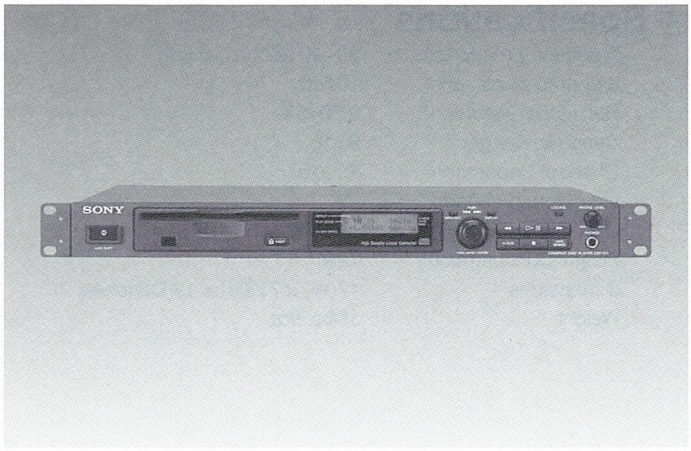
Digital output:

	AES/EBU (XLR-3)	IEC958 (RCA Pin)
Output impedance:	35ohm	75ohm
Output Level:	—	0.5V p-p

Word Sync Input:	(BNC x1) 75Ω TTL 38.6-49.6 kHz
Input impedance:	22kohm/75ohm Switchable
Remote interface:	Parallel DIN 8 pin (2 mode) Serial RS-232C (D-sub 9-pin)
Dimensions (approx.):	482(W) x 145(H) x 335(D)mm (19 x 7 7/8 x 14 7/8 inches)
Weight:	Approx. 7.1kg

CD Player

CDP-D11



- 1U size rack-mountable CD player designed for business and professional applications.
- Offers features such as analog balanced output, digital coaxial and optical output, instant start, speed control & wired remote.
- High density linear conversion provides superb sound quality.
- Functions: AUTO CUE, AUTO PAUSE, MARK&LOCATE (1 Point), VARI-SPEED, INSTANT START are available for professional and business use.
- Variable speed playback in a range of ± 12.5% in 0.5% steps.
- XLR type and phono jack for analog output as well as coaxial and optical digital output.
- 4M bit D-RAM buffer memory which allows instant start and shock resistant operation
- In addition to infrared sensor, it offers CTRL-S, RS-232C, parallel remote and relay playback terminals. Supplied remote RM-DS11.
- Timer playback capability with an external timer.

Specifications

Sampling frequency:	44.1 kHz
Wow and flutter:	Unmeasurable
Frequency response:	20Hz-20 kHz ±0.5 dB
T.H.D.:	Less than 0.01%
S/N ratio:	More than 91 dB
Variable speed range:	±12.5%
Power requirements:	120V AC
Mass:	5 kg
Dimensions:	482/44/350 (W/H/D)mm
Supplied accessory:	Remote commander RM-DS11(1) (Wired and wireless)

OUTPUT

	Connector	Output Level	Load Impedance
Phones	Phone Jack	0-10mW(variable)	32Ω
Analog	XLR3-32	Max. + 10 dBu/+24 dBu(switchable)	More than 600Ω
	Phono Jack	Max. + 8 kBu	More than 10kΩ
Digital	Optical	Optical power-18 dBm	wave length 600 nm
	Coaxial	0.5Vp-p	75Ω

OdBu=0.775Vrms

CD Changer

CDP-CX300

- Internal storage for 300 Discs
- Advanced MegaStorage® Control for a second CD Changer
- Custom File™ Disc Memo™ display shows titles for up to 600 CDs
- Custom File Track Memo shows song titles
- Custom file Group file organizes your Cds into eight groups
- CD Text™ automatic display of disc and track names with compatible CDs
- PC keyboard input for easy text entry
- Easy Play and Easy Eject simplify handliing of 300 CDs
- Remote Commander® remote control

Specifications

Frequency response:	20~20,000Hz ±0.5dB
Signal-to-noise ratio:	107dB
Harmonic Distortion:	0.0045%
Dynamic Range:	93dB
Channel Separation:	100dB
Line Output Voltage:	2V
Line Output Impedance:	50k ohms
Power Consumption:	12w
Dimensions:	17(W) x 7½(H) x 19(D)inches
Weight:	18lbs. 9oz.

CD Player

CDP-XE500

- Digital Volume control on the remote unit raises and lowers the line output level
- Pulse D/A Converter minimizes zero-cross distortion
- 8X Oversampling Digital filter for better stereo imaging, greater accuracy; filter and D/A converter on a single IC chip for shorter signal paths in Sony's "hybrid" converter design
- Direct Digital Sync™ circuitry minimizes the time-base error called jitter for cleaner, more transparent musical frequencies
- Digital Servo Control of tracking, laser focus and disc rotation permits higher precision, lower radiated noise
- Optical Digital Output for connection to another digital input
- Remote Commander wireless remote control with 10-key Direct Access track search, programming and Digital Volume control
- Jog Dial Track Search speeds you to any song
- 24-Track Programming
- 20-Track Music Calendar indicates tracks programmed, played and remaining
- Three Play Modes/Two Repeat modes
- Time and Program edit
- Peak search
- 3-Mode music scan helps you find the spot you are looking for
- Time and Manual Fader to fade-in at the start of songs, fade-out at the end
- Auto Start commences play when you hit the drawer close button
- Anti-Resonant isolator feet with off-center drilling to minimize the transmission of shelf-borne vibration
- Headphone jack for private listening

Specifications

Frequency response:	2 - 20,000kHz ±0.5db
Harmonic distortion:	< 0.0045%
Signal-to-noise ratio:	>100dB
Dynamic range:	>98dB
Channel separation:	>95dB
Line output:	2V, 50kohms
Headphone output:	10mW, 32 ohms
Power requirements:	AC 120V, 60Hz
Power consumption:	10W
Dimensions (WHD):	17 x 3¾ x 14½ inches
Weight:	6 lbs 10 oz

SECTION 7

CD/MD Mastering System

PCM-9000 Digital Master Disc Recorder....7-1
Specifications....7-2
MSD-1200 Digital Audio Master Disc....7-1
RD-M9000 Remote Control Unit....7-1
DABK-9001 20-bit AD/DA Converter Board....7-1
DABK-9003 Remote TC Interface Board....7-1
DABK-9004 SDIF-2 Interface Board....7-1
DABK-9006 DAQ-1000 Interface Board....7-1

Digital Master Disc Recorder

PCM-9000

- Offers high resolution 24-bit 2 channel recording for high quality music mixdown, and CD mastering, and archiving applications
- MSD-1200 – single sided magneto-optical (MO) disc
- AAIP (Absolute Address In Pre-Groove). The pre-groove contains absolute address information so that formatting a new disc is not necessary. The PCM-9000 converts this AAIP into SMPTE/EBU time code for the timer display
- The RM-D9000 Remote Controller provides four different operational modes; Normal, Disc, File and Copy

  Normal mode: Records/reproduces two channels of digital audio using the MAIN data area of the MO disc

  Disc mode: Plays back a single track selected in the normal mode

  File mode: Provides non-linear operation, allowing easy rearrangement of track play order. Up to nine of these program play files can be memorized on the AUX data area of the disc.

  Copy mode: 2x speed–transfer both MAIN data and AUX data (in an order determined in the file mode) to a second PCM-9000 connected via the optional DABK-9005 SCSI interface board.
- In the shuttle mode, track jump sound can be monitored. In the jog mode, digital jog sound is provided
- The recording/reproduction speed can be varied by ±12.5% of normal, in steps of 0.1%
- The sampling frequency can be selected to be either 48kHz, 44.1kHz or 44.056kHz
- Can be synchronized for operation with external reference signals such as composite video, composite sync, black burst, word sync and, AES/EBU. It can be locked to NTSC/PAL video signals and can accommodate any format of time code; SMPTE (drop frame or non-drop frame), EBU or FILM
- Can be locked to incoming time code with sub-frame accuracy without an external synchronizer.
- The integral chase synchronizer has two alternative time code chase synchronization modes: Address or Free
- 2-channel AES/EBU digital insertion point for an external effector
- Disc Erase Functions. In addition to the normal over writing of the record function; instant erase and disc erase modes are available

Supplied Accessories

Quick reference guide
Rack mount adaptor

Optional Accessories

MSD-1200

Digital Audio Master Disc enables two channels of digital audio to be recorded for 100 minutes in 16-bit linear recording mode, 80 minutes in 20-bit and 65 minutes in 24-bit (at Fs = 44.1kHz)
*Preformatted with absolute address in pre-groove (AAIP)

RD-M9000

Remote Control Unit provides convenient remote operation of the PCM-9000. It can either be fitted onto the front panel of the PCM-9000 or located separately with a single cable connection

DABK-9001

20-bit AD/DA Board performs 20-bit A/D and D/A signal conversions

DABK-9003

Remote TC Interface Board contains 9-pin serial remote and 50-pin parallel remote interface connectors. D-sub 9-pin serial remote interface conforms to the Sony serial protocol. Equipped with a serial SMPTE/EBU time code interface connector– a PCM-9000 fitted with a DABK-9003 is capable of outputting SMPTE/EBU time code converted from AAIP and accepting external SMPTE/EBU time code

DABK-9004

SDIF-2 Interface Board allows the PCM-9000 to be connected to a conventional CD/MD premastering or mastering system which incorporates a PCM-1630 Digital Audio Processor

DABK-9006

DAQ-1000 Interface Board enables the PCM-9000 to interface with a conventional DAQ-1000 PQ editing system and DTA-2000 Digital Tape analizer

Specifications
PCM-9000

Format/Performance

Recording format:	Sony digital master disc proprietary format
Disc size:	133mm (5.25-inch), single sided
Digital audio channels:	2 channels
Sampling frequency:	48kHz, 44.1kHz, 44.056kHz selectable
Quantization:	16-bit linear, 20-bit linear, 24-bit linear selectable
Error correction:	Sony super strategy cross interleave Reed Solomon Code (CIRC)
Rotation mode:	Constant Linear Velocity (CLV)
Recording time:	100 minutes (Fs = 44.1kHz, 16-bit) 80 minutes (Fs = 44.1kHz, 20-bit) 65 minutes (Fs = 44.1kHz, 24-bit)
Variable speed range:	±12.5% (0.1% steps)
Editing accuracy:	1 word

Digital Audio Signal
PCM-9000 with DABK-9001 20-bit AD/DA board

Frequency response:	20Hz to 20kHz ±0.5dB at Fs = 48kHz
Total harmonic response:	Less than 0.03% (20Hz to 20kHz at reference level)
Signal-to-noise ratio:	More than 103dB
Crosstalk between channels:	Less than -103dB at 20Hz to 20kHz

Digital Inputs/Outputs

Digital inputs:	2 ch, AES/EBU, XLR (x1) 2 ch, SDIF-2 unbalanced, BNC type (x2), w/DABK-9004
Digital outputs:	2 ch, AES/EBU, XLR (x1) 2 ch, SDIF-2 unbalanced, BNC type (x2), w/DABK-9004
Insertion send:	2 ch, AES/EBU, XLR (x1)
Insertion return:	2 ch, AES/EBU, XLR (x1)

Analog Inputs/Outputs

Analog inputs:	2 ch, +4dBU (+26dBu max.), adjustable range of -6dBu to +6dBu 20kΩ/600Ω selectable, balanced, XLR (x2), w/DABK-9001
Analog outputs:	2 ch, +4dBU (+26dBu max.), adjustable range of -6dBu to +6dBu, 60Ω, balanced, XLR (x 2), w/DABK-9001

Other Inputs/Outputs

Time code IN:	SMPTE/EBU, 0.5Vp-p to 10Vp-p, 10kΩ, balanced, XLR (x1), w/DABK-9003
Time code OUT:	SMPTE/EBU, 2.4Vp-p to ±0.1V, less than 100Ω, balanced, XLR (x1), w/DABK-9003
Word sync IN:	More than 3Vp-p, 75Ω, BNC type (x2), loop-through
Word sync OUT:	TTL compatible, 75Ω, BNC type (x2)
D/I sync IN:	AES/EBU, XLR (x1)
Reference video:	Black Burst: 0.3Vp-p, 75Ω Composite sync: 4Vp-p, 75Ω Square wave: 0.3Vp-p to 5Vp-p, 75Ω BNC type (x2), loop-through
Cue data IN:	0.5Vp-p to 10Vp-p, 600Ω/10kΩ, balanced, XLR (x1), w/DABK-9006
Cue data OUT:	2Vp-p to ±0.2V, 600Ω, balanced, XLR (x1), w/DABK-9006
Status OUT:	RS-232C, D-sub 25-pin (x1)
RM-D9000 remote:	DIN 10-pin (x1)
Serial remote:	RS-422, D-sub 9-pin (x1), w/DABK-9003
Parallel remote:	TTL compatible, D-sub 50-pin, w/DABK-9003
DAQ-1000 I/F:	TTL compatible, amphenol 36-pin (x1), w/DABK-9006

General

Power requirements:	AC 100V to 240V, 50/60Hz
Power consumption:	130W (with maximum options)
Dimensions:	424 (W) x 176 (H) x 455 (D) mm (16 3/4 x 7 x 17 3/4 inches)
Weight:	18kg (39 lb 11 oz) PCM-9000 with RD-M9000

SECTION 8

Audio Mixers & Consoles

MultiTrack Mixing Consoles

OXF-R3 Digital Audio Console.....8-1, 8-2

Specifications.....8-3 Through 8-6

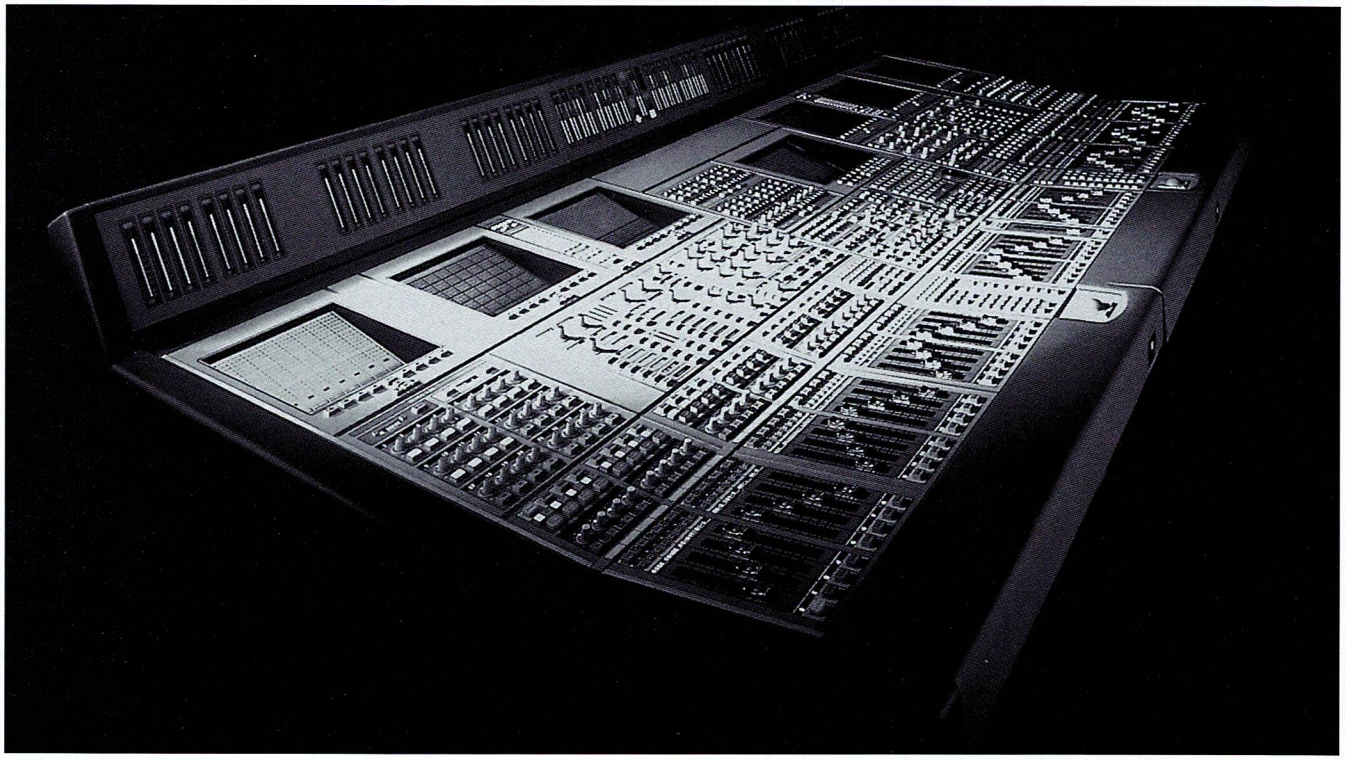
DMX-R100 Digital Mixing Console.....8-7

Mixers

SRP-V110 14-Channel Audio Mixer.....8-10

Digital Audio Console

OXF-R3



- High-end digital recording and mix-down console
- Provides exemplary sound quality and greater functionality than current high-end analog consoles
- Flexible architecture including a modular control surface, expandable signal processing array, and separate input/output units
- Accommodates up to 120 input sources for mix-down, and full dynamic automation of all parameters is provided
- The control surface uses the concept of assignability to allow the operation of large systems from a compact, easy to learn surface
- Remote racks for Mic amp, ADCs, DACs & Digital I/O
- Modular control surface
- Integrates with PCM-3348 & PCM-3348HR Multitrack machines
- Vari-speed operation of ±12.5% is supported
- Equalization and dynamics processing with extraordinary flexibility
- Fully integrated dynamic automation, machine control, and session management
- Multitrack routing to 48 buses
- 24 cue/auxiliary send buses, which can be linked for stereo
- 1 master and 8 independent stereo subgroup outputs
- 3 stereo control room outputs, 1 stereo studio output
- 8 speaker monitor outputs for multi-format monitoring
- 4 stereo headphone/foldback group outputs
- Up to 26 stereo input external source monitoring switcher
- Addition of 6 multi-format external sources
- 2 talkback groups
- Omni and individual talkback to each foldback output and studio LS
- 48 channel faders (2 banks of 24) and 16 multi-purpose master faders (all motorized)
- Microphone amplifiers with gain remotely controlled are integrated with ADCs
- MADI, AES/EBU digital I/O

OXF-R3

The OXF-R3 system consists of three main sections; the control surface, the processor rack, and the I/O racks.

● Control Surface

The concept of assignability is used to allow very powerful signal processing features to be operated from a compact surface.Channel paging is used to increase the number of audio channels which can be controlled from a given surface size, and channel controls (e.g. equalizers) are selected to a particular channel using "ACCESS" buttons. In addition to familiar knobs, switches, and motorized faders, color LCD screens are used to provide additional information and control functions such as the I/O routing.

Color TFT LCD graphics screens are fitted, one per 8 faders in channel sections and one for a system control display in the center section. These allow high quality visual feedback with regard to many functions of the R3. They include input/output routing, EQ and dynamics curves etc. on the channel screens, automation/session management and master statuses on the central display.

● Processor Rack

The processor rack is installed remotely from the surface(e.g. in a machine room). It includes a host computer and an array of signal processor cards. The host computer is used for system initialization, diagnostics, and storage of automation data. The signal processor array is general-purpose in the sense that it has no fixed relationship to the console signal path. The console bus structure and features are entirely defined in software, and thus the system can be expanded by adding processing cards.

● I/O Racks

The I/O racks are installed separately from the processor rack, and can be positioned as close as possible to the equipment to which they relate. For example, the combined microphone amplifier/ADC units can be installed in the the studio close to the microphones, with digital I/O connections mounted adjacent multitrack and master recorders. All connections between I/O racks and processor rack use either standard 75-ohm coaxial cable or fiber optic cable to minimize wiring.

Specifications

OXF-R3

General

Temperature range:	Temperature for complete system performance: 10˚C to 35˚C (50˚F to 95˚F)
Operating temperature:	5 ˚C to 40 ˚C (41 ˚F to 104 ˚F)
AC input power requirements:	OXF-CP3048 Control Panel AC 100 to 240 V, 50/60 Hz, 500 W x 2, 7.5 A x 2 OXF-CP3024 Control Panel AC 100 to 240 V, 50/60 Hz, 500 W, 7.5 A OXF-SP3000 SP Rack Japan: AC 100 V, 50/60 Hz, 750 W USA/Canada: AC 120 V, 50/60 Hz, 750 W, 10 A Other countries: AC 220 to 240 V, 50/60 Hz, 700 W, 5 A OXF-IO3000 I/O Rack Japan: AC 100 V, 50/60 Hz, 240 W USA/Canada: AC 120 V, 50/60 Hz, 240 W, 3 A Other countries: AC 220 to 240 V, 50/60 Hz, 240 W, 2 A
Input channels:	96 Full Mono Channels 12 Stereo Return Channels
Busses, master inputs & outputs:	Main Stereo Bus Outputs 8 Stereo Sub-Group Bus Outputs 24 Send Bus Outputs (Switchable to up to 12 stereos) 48 Multitrack Busses 3 Stereo Control Room Monitor LS Outputs 2 Studio LS Outputs with Individual Talkbacks 4 Stereo Foldback Group Outputs Up to 9 Stereo External Source Inputs
Session management system:	Control and storage of data for Projects, Titles, Mixes, Snapshots & Cue points Fully integrated dynamic automation including machine control Mix & set-up data easily transferred between systems using ISO 540 MByte MO
Analog I/O : (2 types - 4 or 8 chs per module):	4 ADCs per module with separate Mic & Line inputs 8 ADCs per module with single combined Mic/Line inputs 4 DACs per module ideal for main output & monitor applications 8 DACs per module ideal for effect sends, etc
Digital I/O:	MADI for 2 MTRs to be connected directly to the SP Rack AES/EBU, 4 stereo inputs and outputs per module Timecode, 9-pin and DASH/DASH PLUS REC Ready
Sample rates:	44.1 kHz to 48 kHz ± 12.5 % (The OXF-R3 always requires an external BNC audio word clock)

DMBK-R3001 (4-ch ADC):

Gain Control:
MIC: -20 dB to +80 dB relative to op level in 1 dB steps
LINE: -30 dB to +20 dB relative to op level in 1 dB steps

Input Impedance:
MIC: 1.5 kΩ or 100 kΩ switchable
LINE: 16 kΩ

Frequency Response:
20 Hz to 20 kHz ±0.2 dB

Distortion:
0 dBfs: < -96 dBfs (0.005 % THD + N)
-20 dBfs: Harmonic content < -115 dBfs

Noise Floor:
MIC: < -125 dBu Equivalent Input Noise (Zin = 200 Ω, Gain = 80 dB)
LINE: -108 dBfs Gain Control at 0 dB

Crosstalk:
< -90 dBfs, 20 Hz to 20 kHz

CMRR:
MIC: > 45 dB, 20 Hz to 20 kHz (Gain = 0 dB)
>110 dB, 20 Hz to 20 kHz (Gain = 80 dB)"
LINE: > 50 dB, 20 Hz to 20 kHz (Gain = 0 dB)

External power supply:
MIC: DC 48V individually switched

DMBK-R3003 (8-ch ADC):

Gain Control:
MIC: -20 dB to +80 dB relative to op level in 1 dB steps

LINE: -30 dB to +20 dB relative to op level in 1 dB steps

Input Impedance:
MIC: 100 kΩ
LINE: 16 kΩ

Frequency Response:
20 Hz to 20 kHz ± 0.2 dB

Distortion:
0 dBfs: < -96 dBfs (0.005% THD+N)
-20 dBfs: Harmonic content < -115 dBfs

Noise Floor:
MIC: < -125 dBu Equivalent Input Noise (Zin = 200 Ω, Gain = 80 dB)

LINE:
-105 dBfs Gain Control at 0 dB

Crosstalk:
< -90 dBfs, 20 Hz to 20 kHz

CMRR:
MIC: > 45 dB, 20 Hz to 20 kHz (Gain = 0 dB)

>110 dB, 20 Hz to 20 kHz (Gain = 80 dB)

LINE:
> 50 dB, 20 Hz to 20 kHz (Gain = 0 dB)

External Power Supply:
MIC: DC 48V individually switched

OXF-R3 Specifications Continued

DMBK-R3002
(4-ch DAC):

Output Type:
ELECTRONIC Floating type, performance identical in balanced and unbalanced modes

Maximum Output:
+24 dBu

Output Level Control:
-16 dBu to +24 dBu set by console menu

Equivalent Source Impedance:
< 10 Ω

Output Balance:
20 Hz to 20 kHz, 60 dB (0.1 %)

Minimum Load:
300 Ω

Frequency Response @ Fs 48 kHz
20 Hz to 20 kHz ±0.2 dB

Distortion:
0 dBfs: < -96 dBfs (0.005 % THD+N)
- 50 dBfs: Harmonic content < -135 dBfs

Output Noise :
< 109 dB (ref +24 dBu)

Crosstalk:
< -100 dBfs, 20 Hz to 20 kHz

DMBK-R3004
(8-ch DAC)

Output Type :
Electronically balanced

Maximum Output:
+24 dBu into balanced load
+20 dBu into unbalanced load

Output Level Control:
+14 dBu to +24 dBu set by trimmer on module

Equivalent Source Impedance:
< 100 Ω

Output Balance:
20 Hz to 20 kHz, 46 dB (0.5 %)

Minimum Load:
300 Ω

Frequency Response @ Fs 48 kHz:
20 Hz to 20 kHz ±0.2 dB

Distortion:
0 dBfs:< -90 dBfs (0.005 % THD+N)
-50 dBfs: Harmonic content < -120 dBfs

Output Noise:
< 104 dB (ref +24 dBu)

Crosstalk:
< -100 dBfs, 20 Hz to 20 kHz

System signal to noise performance:

Since the internal architecture of the OXF-R3 is 32 bit, with a dynamic range of greater than 190 dB in general, the system signal to noise ratio is almost entirely dependent upon the noise performance of its sources.

At this point in time, the conversions from analog to digital and back are the most critical stages.

The OXF-R3 system has two types of converter modules, 4 and 8 channel units.

The more comprehensive 4 channel type have slightly better performance than the 8 channel units.

One further relevant factor is calibration of dBfs, i.e. what is the highest analog level just before clip point.

Although the gain control resolution is 1 dB, the analog stages are switched in 6 dB steps.

The 1 dB steps are achieved in the digital domain, thereby amplifying the noise of the analog stages accordingly.

This means that the greatest dynamic range is achieved where no digital amplification takes place, i.e. where dBr is set at levels which are divisable by 6: +24 dBu, +18 dBu, +12 dBu and so on.

4 Ch ADC Noise Performance:
< -105 dBr, 20 Hz to 20 kHz

8 Ch ADC Noise Performance:
< -100 dBr, 20 Hz to 20 kHz

Audio Performance

Note: Wherever dB values are specified, the following conventions apply:
0 dBu = 0.775 V r.m.s. reference
0 dBm = 1 mW (0.775 V r.m.s.) into 600Ω
dBfs = referenced to digital full scale
dBr = referenced to max. analog operating level
dB = referenced to unity gain

* Noise figures are measured with a bandwidth from 20 Hz to 20 kHz

OXF-R3 Specifications Continued

Channel Equalizer & Filters

Section	Gain	Frequency	Q/Slope	Overshoot
LF Filter	-6 dB steps	20 to 200 Hz	0 to 36 dB/Oct	—
LF Peak/Shelf	±20 dB	20 to 400 Hz	0.5 to 16	0 to 50 % (Q adjust:Shelf)
LMF	±20 dB	30 to 600 Hz	0.5 to 16	—
MF	±20 dB	100 Hz to 6 kHz	0.5 to 16	—
HMF	±20 dB	600 Hz to 18 kHz	0.5 to 16	—
HF Peak/Shelf	±20 dB	2 to 20 kHz	0.5 to 16	0 to 50 % (Q adjust:Shelf)
HF Filter	-6 dB steps	2 to 20 kHz	0 to 36 dB/Oct	—

Dynamics Gain Reduction:
All levels in the table below are referenced to full scale and time constants apply to a 10 dB gain change. The time constant marked * denotes a calculated value for 10 dB gain change since the true figure is 40 dB gain change in 20.8 ms (1 sample).

Section	Threshold	Ratio/Range	Attack	Hold	Release
Gate	-80 to 0 dB	0 to -80 dB	5 µs* to 26 ms	10 ms to 10 s	7.8 to 519 ms
Expander	-60 to 0 dB	1:1 to 1:16, 0 to -80 dB	260 µs to 104 ms	10 ms to 20 s	5.2 to 519 ms
Compressor	-60 to 0 dB	1:1 to 1000:1	519 µs to 52 ms	10 ms to 30 s	52 ms to 3.1 s
Limiter	-20 to 0 dB	—	100 µs to 500 ms	50 ms to 30 s	100 ms to 10 s
Compressor	Gain Make-up		Soft Curves		
	0 to 24 dB		5 dB, 10 dB, 15 dB, 20 dB across Threshold		

Dynamics Side-Chain EQ: 2 band side-chain EQ can be inserted
– The Dynamics Side-Chain alone
– The Signal Path alone
– Both the Side-Chain and the Signal Path

Section	Gain	Frequency	Q/Slope	Overshoot
LF Peak	±20 dB	20 Hz to 1 kHz	0.5 to 16	—
HF Peak	±20 dB	500 Hz to 20 kHz	0.5 to 16	—

Dimensions & Mass

Equipment	Width	Height	Depth	Mass
OXF-CP3048 Control Panel	2516 mm 99 1/8 inches	1045.5 mm 41 1/4 inches	1215.2 mm 47 7/8 inches	382 kg 842 lb 3 oz
OXF-CP3024 Control Panel	1620 mm 63 7/8 inches	1045.5 mm 41 1/4 inches	1215.2 mm 47 7/8 inches	221 kg 487 lb 4 oz
OXF-SP3000 SP Rack	482.2 mm 19 inches	666 mm 26 1/4 inches (15 U)	604 mm 23 7/8 inches	60 kg 132 lb 4 oz
OXF-IO3000 I/O Rack	482 mm 19 inches	310 mm 12 1/4 inches (7 U)	494.5 mm 19 1/2 inches	25 kg 55 lb 2 oz

OXF-R3 Specifications Continued

Supplied accessories:

Operation Manual (1)
Installation Manual (1)
IF-581A for Host Computer (1)
AC Power Cord (2) for OXF-CP3048
AC Power Cord (1) for OXF-CP3024
PCI Cable (1) for OXF-SP3000
AC Power Cord (1) for OXF-SP3000
AC Power Cord (1) for OXF-IO3000
100-pin ↔ 50-pin Split Cable (2) for DMBK-R3010

Optional accessories:

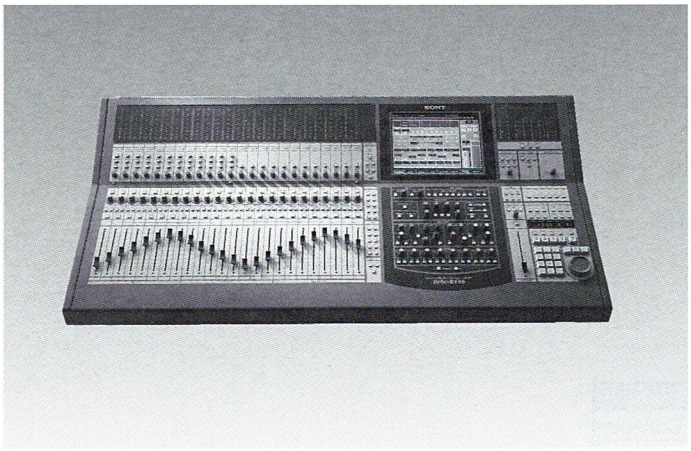
DMBK-R3011 Producer's Desk
DMBK-R3012 Speaker Stand

Product identities:

Product Number	Model Name
OXF-R3	Sony Digital Audio Mixing Console
DMSK-R3096	Sony Digital Console Software
OXF-CP3048	Sony Control Panel
OXF-CP3024	Sony Control Panel
OXF-SP3000	Sony SP Rack
OXF-I03000	Sony I/O Rack
DMBK-R3001	Sony Mic/Line A/D Converter
DMBK-R3002	Sony Monitor D/A Converter
DMBK-R3003	Sony Line A/D Converter
DMBK-R3004	Sony Line D/A Converter
DMBK-R3005	Sony SP Board
DMBK-R3006	Sony SP Link Board
DMBK-R3008	Sony AES/EBU D I/O Board
DMBK-R3009	Sony Timecode Board
DMBK-R3010	Sony GPI Control Board
DMBK-R3011	Sony Producer's Desk
DMBK-R3012	Sony Speaker Stand

Digital Mixing Console

DMX-R100



- Excellent Sound Quality - High-quality 24-bit A/D and D/A converters. Selectable sampling rates 44.1 kHz, 48 kHz, 88.2 kHz or 96 kHz.
- High Resolution Color LCD Touch Panel - The parameters of each channel are displayed in color on one screen. Allows quick and precise operations.
- Professional Automation Functions - Dynamic and Snapshot automation: Includes internal memory settings with instant recall. 10-bit resolution faders with touch-sensor allows smooth touch-write operation. Automation data (dynamic and snapshot) can be saved to/retrieved from an internal 3.5-inch floppy disk or an external drive.
- Flexible Channel Strips - LED indicators on channel pan controls and faders allow you to know the settings at a glance.
- Built-in Matrix Switcher - The built-in GUI-based input matrix switcher allows you to assign standard analog input, digital input or input from option boards to any desired channel, or to any output of the desired option boards.
- Dedicated Control Panel - All channel parameters (including Trim, Assign, delay, EQ, Dynamics, and Sends) have discrete control knobs and switches offering fast and easy access.
- Large Channel Capacity - 48 channels with full functions. 24 analog input channels consisting of Input A: 12-XLR mic, Input B: 12-TRS line, 12-Combo line inputs, *plus* 8 AUX returns. Allowing you to mix up to 56 channels at the same time. Four optional slots provides for additional I/O.
- 5.1 Surround Mode - Featuring touch-panel surround panning in 5.1 format. 6 channel outputs for surround monitors are provided. Surround panning moves can be recalled using dynamic automation.
- Video Compatibility - Can synchronize with video equipment via built-in reference video signals. Can control 2 external transports using Sony 9-pin remote serial interface.
- MIDI and PC Interface - Allows connection to MIDI devices (MTC, MIDI CLK and MMC) and has PC connection for external drives and USB peripherals.

Specifications

Input/Output Connectors

Digital audio input/output

Digital input connectors

Connector	Number of inputs	Number of channels	Connector type	Signal format
AUX RET 5/6, 7/8	x2	x4	XLR-3-31	AES/EBU
2TR IN 2	x1	Stereo x2	XLR-3-31	AES/EBU

Digital output connectors

Connector	Number of inputs	Number of channels	Connector type	Signal format
PGM	x1	x2 (L/R)	XLR-3-32	AES/EBU
AUX SEND 5/6, 7/8	x2	x4	XLR-3-32	AES/EBU

Analog audio input/output

Analog input connectors

Connector	Number of inputs	Number of channels	Connector type	Reference level	Maximum input level	Input impedance
IN A1 to 12	x12	x12	XLR-3-31 Balanced	-60 to + 10 dBu	+24 dBu	4.7 kΩ
IN B1 TO 12	x12	x12	1/4" TRS, Balanced	-60 to + 10 dBu	+24 dBu	10 kΩ
LINE IN 13 TO 24	x12	x12	Combo coax, Balanced	-60 to + 10 dBu	+24 dBu	10 kΩ
2TR IN 1 L/R	x2	x2 (L/R)	1/4" TRS, Balanced	+ 4 dBu	+24 dBu	10 kΩ
AUX RET 1 to 4	x4	x4	1/4" TRS, Balanced	+ 4 dBu	+24 dBu	10 kΩ

Analog output connectors

Connector	Number of outputs	Number of channels	Connector type	Reference level (load impedance)	Maximum input level	Output impedance
PGM L/R	x2	x2 (stereo)	1/4" TRS, Balanced	+ 4 dBu (10kΩ)	+ 24 dBu (10kΩ)	150 Ω
	x2	x2 (stereo)	XLR-3-32, Balanced			
AUX SEND 1 TO 8	x8	x8	1/4" TRS, Balanced			
STD MONITOR L/R	X2	X2 (stereo)				
CR MONITOR 1 to 6	x6	x6				

DMX-R100 Specifications Continued

Audio Characteristics

Signal processing characteristics

Characteristics			Specification
Signal processing		32/40 bit floating point	
Equalizer	High frequency range	Frequency range	1fs:622 Hz to 19.9 kHz (61 points) 2fs:622 Hz to 39.8 kHz (73 points)
		Response adjustable range	±20 dB (128 points, 0.25 to 0.5 dB step)
		Q	0.5 to 16 (63 points)
		Type	Shelving/Peaking switchable
	High-mid frequency range	Frequency range	220 Hz to 7.0 kHz (61 points)
		Response adjustable range	±20 dB (128 points, 0.25 to 0.5 dB step)
		Q	0.5 to 16 (63 points)
		Type	Peaking
	Low-mid frequency range	Frequency range	77.8 Hz to 2.5 kHz (61 points)
		Response adjustable range	±20 dB (128 points, 0.25 to 0.05 dB step)
		Q	0.5 to 16 (63 points)
		Type	Peaking
	Low frequency range	Frequency range	27.5 Hz to 880 Hz (61 points)
		Response adjustable range	±20 dB (128 points, 0.25 to 0.5 dB step)
		Q	0.5 to 16 (63 points)
		Type	Shelving/Peaking switchable
Filter	High cut filter	Cut-off frequency	1fs: 1.48 kHz to 22.35 kHz (48 points) 2 fs: 1.48 kHz to 42.2 kHz (59 points)
		Roll-off characterisitics	12 dB/Octave
	Low cut filter	Cut-off frequency	27.5 Hz to 415 Hz (48 points)
		Roll-off characteristics	12 dB/Octave
Dynamics	Compressor/Ducking	Threshold	0 dB to - 60 dB (106 points)
		Attack time	20µs to 1 s (121 points)
		Release time	31.6 ms to 50.1 s (97 points)
		Ratio	1 : 1 to ∞ : 1 (31 points)
		Range	AUTO, 0 dB to 15 dB (0.25 dB step)
		Hold time	20µs to 1 s (121 points)
	Expander/Gate	Threshold	0 dB to -80 dB (126 points)
		Attack time	20 µs to 1 s (121 points)
		Release time	31.6 ms to 50.1 s (97 points)
		Ratio	1 : 1 to 1 : 10 (31 points)
		Range	0 dB to 60 dB (1 dB step)
		Hold time	20 µs to 1 s (121 points)
Oscillator		Frequency	20 Hz to 20 kHz (28 points)
		Output level	- ∞ to 10 dBFS (31 points)
Level meter		Indicator	20 segment LED
		Overload detection	Full-scale 1 word

Other audio characteristics

Characteristics	Specifications	
Frequency response	Line input (LINE IN to PGM OUT)	20 Hz to 20 kHz, ±0.2 dB
	Mic input (MIC IN to PGM OUT)	20 Hz to 20 kHZ, ±0.3 dB
Harmonic distortion	Line input (LINE IN to PGM OUT)	0.01%, at + 4 dBs, 1kHz
	Mic input (MIC IN to PGM OUT)	0.1%, at - 60 dBS, 1 kHz
Noise level	Mic input	-104 dBu, 600Ω terminated (-80 dBµ. 4 dB standard)
	Mic input	-126 dBu, 150Ω terminated
Crosstalk	Between input and output channels	90 dB at 1 kHz
Dynamic range	Line input (LINE IN to PGM OUT)	104 dB
A to D converter	24-bit, x 128 oversampling	
D to A converter	24-bit, x128 oversampling	
Total delay	2.5 ms (Between LINE IN and PGM OUT) FS = 48 KHZ	

Automation Function

Item	Contents	
Title	Contents of title	Title configuation, snapshot automation, mix (saved dynamic automation)
	Number of title configuration	x1
	Number of snapshot automation	x1
	Storage	Built-in flush memory or floppy disk
Title configuration	Contents of title configuration	FS, Initial snapshot, Timecode mode, Output
Snapshot automation	Number of snapshots	99 max.
	Number of MIDI events	99 max.
	Number of cue points	99 max.
	Number of events per cue point	1
	Size of snapshot	8 kbyte/snapshot
	Memory	Dynamic RAM [a]
	Time accuracy of cue linked event	±1 frame
	Contents of snapshots	Input router, delay, phase, trimming, input mode, filter, equalizer, dynamics, pan assign, cut, fader, AUX
Dynamic automation	Buffer size	1 M byte
	Number of temporary buffers	2 (A and B)
	Event size	12 bytes/effective frame (min)
	Memory	Dynamic RAM [a]
	Time accuracy	± 1 frame
	Contents of dynamic automation [a]	Filer, equalizer, dynamics, pan, assign, cut, fader, AUX
Fader resolution		10-bit (1024 steps)

a) When you turn off the power of the unit, or start the unit without performing KEEP operation, the automation data will be cleared.

DMX-R100 Specifications Continued

Analog insertion signal

Connector	Number of inputs/ outputs	Number of channels	Connector type	Reference level (load impedance)	Maximum input / output level (load impedance)	Input/ output impedance
Insertion 1 to 12 (send/return)	x12	x12	1/4" TRS, Unbalanced	0 dBu (10 kΩ)	+20 dBu (10 kΩ)	Send: 150Ω Return: 10kΩ

Control signal input/output

Connector	Connector type (load impedance)	Signal format	Reference level
REF WORD (with 75Ω termination switch)			
IN	x1, BNC type (75Ω)	Duty 50%	—
OUT	x1, BNC type (75Ω)		
REF VIDEO	x2, BNC type (loop through) (75Ω)	NTSC Color/B&W PAL	VB, BB: 1.0 ±0.2Vp-p Composite: 0.2 V to 5 Vp-p
TIME CODE input/output	XLR-3-32, Balanced/XLR-3-31	SMPTE/EBU	
MIDI			
MTC	DIN 6-pin		
IN	DIN 6-pin	MIDI standard	
OUT	DIN 6-pin		
THRU			
REMOTE			
IN	D-sub 9 pin, female	Sony 9 pin	
OUT 1, OUT 2			
PC PORT	Mini DIN 8 pin female	—	
FOOT SW	Phone jack	Make-point	
MOUSE	Mini DIN 6 pin	PS/2	
KEYBOARD	Mini DIN 6 pin	PS/2	
USB	—	USB	
SERIAL	D-sub 9 pin	RS-232C	
MONITOR	D-sub high density 15 pin	Analog RGB	

Pin assignment

XLR-3-31/XLR-3-32 connector	2:Hot	3:Cold	1:GND
1/4" TRS (Balanced) connector	Tip:Hot	Ring:Cold	Sleeve:GND
1/4" TRS (Unbalanced) connector	Tip:Insertion Send	Ring:Insertion return	Sleeve:GND

Supplied Accessories

Power supply cord (1)
Operating Instructions (1)

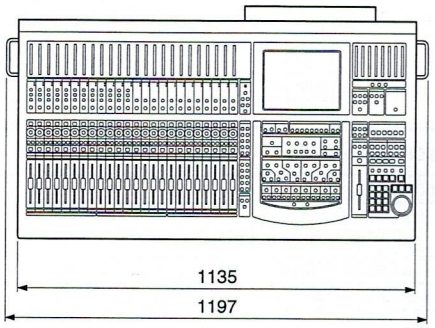
Optional Accessories

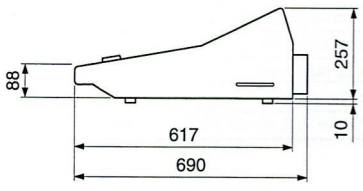
DMBK-R101 8CH Analog Line In Board
DMBK-R102 8CH Analog Line Out Board
DMBK-R103 8CH AES/EBU DIO Board
DMBK-R104 8CH Sampling Rate Converter DI Board
DMBK-R105 8CH Insertion Board
DMBK-R106 Interface Board for adat
DMBK-R107 Interface Board for TDIF

Design and specifications are subject to change without notice.

Others

Power requirements:	100 to 120V AC, 50/60 Hz
Power consumption:	200 W
Dimensions:	1140 x 240 x 677 (w/h/d) mm (45 x 9 1/2" x 26 3/4" inches)
Mass	55 kg (121 lb 4 oz)
Operating temperature:	-5°C to 35°C (41°F to 95°F)
Storage temperature:	-20°C to 60°C (-4°F to 140°F)





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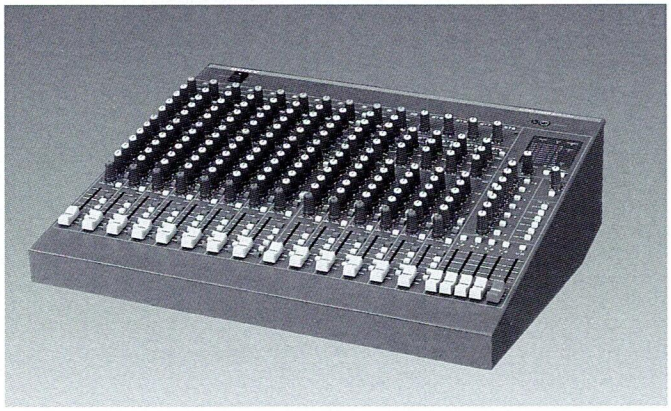
14-Channel Audio Mixer

SRP-V110



- 10-mono input (1-8 mono input has tape input connector with RCA type jacks)
- 4-stereo input and 4-stereo sub-input
- Monitor function (using AUX 1-2) for 1-8 mono input
- 8-AUX output (switchable knobs between 5-6 and 7-8)
- 8-subgroup output 4-stereo group pair faders and L/R master output
- 3-band EQ for mono and stereo input
- 9U 19 inch rack mountable with MU-110BK
- MU-110BK optional rack mount adapter

Specifications

Residual noise:	Less than -95dBu (Master out)
Power requirements:	AC 120V
Dimensions:	430(W) x120(H) x 396(D)mm (17 x 4 3/4 x 15 3/5 inches)
Weight:	Approx. 8.7g (19 lb 3 oz)

		Type of connector	Type of circuit	Reference level	Maximum level
MONO INPUT	MIC	XLR	Balanced	-60 – -10dBu	-37 – +13dBu
	LINE	Phone Jack	Balanced	-40 – -10dBu	-17 – +30dBu
	TAPE INPUT	Pin Jack	Unbalanced	-10dBu	+13dBu
	INSERT INPUT	Phone Jack	Unbalanced	-3dBu	+20dBu
STEREO INPUT	1-4	Phone Jack	Balanced	-10/+4dBu	+13/+27dBu
	5, 7	Pin Jack	Unbalanced	-10dBu	+30dBu
	6, 8	Phone Jack	Unbalanced	-10dBu	+30dBu
AUX OUPUT		Phone Jack	Unbalanced	+4dBu	+20dBu
GROUP/DIRECT OUPUT		Pin Jack	Unbalanced	-10dBu	+10dBu
2 TR	INPUT	Pin Jack	Unbalanced	-10dBu	+30dBu
	OUTPUT	Pin Jack	Unbalanced	-10dBu	+10dBu
STEREO OUTPUT		XLR	Balanced	+4dBu	+24dBu
	INSERT INPUT	Phone Jack	Unbalanced	-6dBu	+20dBu
	INSERT OUTPUT	Phone Jack	Unbalanced	-6dBu	+20dBu
MONITOR		Phone Jack	Unbalanced	-4dBu	+20dBu

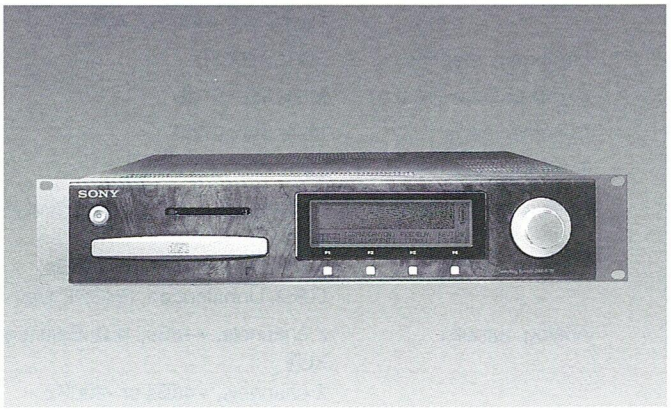
SECTION 9

Digital Signal Processors

DRE-S777 Digital Sampling Reverb.....9-1
DPS-V77 Multi-Effects Processor 9-2
DPS-V55 Multi-Effects Processor 9-3

Digital Sampling Reverb

DRE-S777



- Uses Real Impulse Response reverberation algorithms based on actual acoustic spaces
- Standard Features
  - Reverberation time from 1 to 5 seconds in 0.25 seconds steps
  - Pre-Delay is variable from 0 to 0.5 seconds in 1-millisecond steps
  - AES/EBU I/O provided as standard
  - Word Sync and AES/EBU DI Sync
  - MIDI interface
  - Compact 2U size, rack-mountable
- Optional Features
  - Optional 24-bit 2-ch ADC
  - Optional 24-bit 2-ch DAC
  - Optional expansion DSP board allows selecting several modes of operation according to the following chart

Mode	Input	Output	Sampling Frequency	Option
Standard	Monaural	Stereo	44.1/48 kHz	No
Stereo In	Stereo	Stereo	44.1/48 kHz	DABK-S703 x 1
Surround	Monaural	4 channels	44.1/48 kHz	DABK-S703 x 1
Double FS	Monaural	Stereo	88.2/96 kHz	DABK-S703 x 1

**Also available as*
DRE-S777/PAC

Which includes
1 - DRE-S777
1 - DABK-S701
2 - DABK-S702
1 - DABK-S703

Specifications

Effect Performance

Reverb algorithm:	Real Impulse Response
Number of standard reverb:	7
Reverb parameters:	Reverb time: 1-5 seconds max. (0.25 s/step) Pre-Delay time: 0.05 seconds (1 ms/step)

Digital Audio Signal

Sampling frequency:	44.1/48 kHz (Standard) 88.2/96 kHz (Optional)
Frequency response:	20 Hz to 20 kHz +0.2 dB/-0.5 dB (44.1/48 kHz (Standard) 20 Hz to 20 kHz +0.2 dB/-0.5 dB (88.2/96 kHz (Optional))
Quantization:	24 bit
Signal-to-noise ratio:	More than 105 dB
T.H.D.:	Less than 0.01% at -20 dBFs
Crosstalk:	Less than -90 dB (8 kHz)

Inputs/Outputs

Digital inputs:	AES/EBU, 110Ω, XLR 3-31 type (x 1)
Digital outputs:	AES/EBU, 110Ω, XLR 3-32 type (x 2)
Analog inputs:	+4 dBu (+24 dBu max.), balanced, 10k or 600Ω, XLR 3-31 type (x 2)
Analog outputs:	+4 dBu (+24 dBu max.), balanced, less than 50Ω, XLR 3-32 type (x 4)
CMRR:	More than 50 dB (1 kHz)
MIDI input:	50 mA current loop type, DIN 5-pin (x 1)
MIDI output:	50 mA current loop type, DIN 5-pin (x 1)
Word sync input:	SDIF compatible, 75Ω, unbalanced, BNC type (x 1)
Word sync output:	SPDIF compatible, 75Ω, unbalanced, BNC type (x 1)
Word/DI sync Fs range:	-12.5 to +8.0% variable
RS-232C input:	D-sub 9-pin (x 1)

General

Dimensions:	480(W) x 88.2(H) x 450(D) mm (19 x 3 1/2 x 17 3/4 inches)
Mass:	20 kg (44 lb 1 0z)
Power consumption:	150 W
Power requirements:	AC 120V, 60 Hz

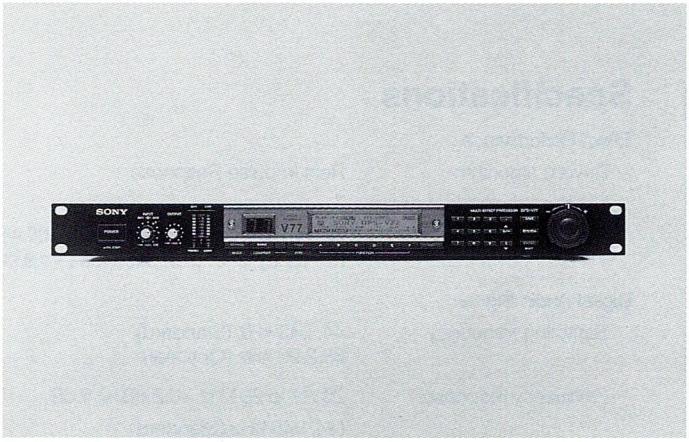
Supplied Accessories
Sampling reverb data CD-ROM (1)
AC power cord (1)
Operation manual (1)

Optional Accessories

DABK-S701 A/D Converter Board
DABK-S702 D/A Converter Board
DABK-S703 Expansion DSP Board
DASK-S701 Sampling Reverb Software

Multi-Effects Processor

DPS-V77



- Excellent sound quality from 24-bit resolution A/D, 52-bit internal processing, and 20-bit resolution D/A
- Effects include Reverb, Delay, Chorus, Intelligent Pitch Shifting, Harmonization, and Dynamics
- 2 independently controllable effect blocks and level mixer blocks
- EQ / main effect in each effect block
- 2 effect blocks can be arranged either Serially or in Parallel (see structures below)
- Easy to operate featuring large display, jog and shuttle function, 10 keys, preset number display with 7 segment LED, and SPC (Standard Parameter Configuration).
- Digital I/O (44.056 or 44.1 or 48.0 kHz) AES/EBU or SPDIF (with optional RKU-77US cable)
- 198 preset memories and 198 user memories (99 * 2 Blocks, 99 * 2 Blocks)
- Long Delay Time
  - 1.3sec. St.(2.6sec. Mono)
  - 2.6sec. St.(5.2sec. Mono)
  - 5.2sec. St.(10.4sec. Mono)
- MIDI control/assignable foot control
- 1U rack size
- Seamless morphing transition between 2 presets

Specifications

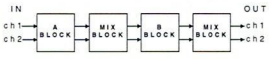
Quantization:	Internal 52-bit, delay memory 32-bit
A/D converter:	1-bit ADC (24-bit resolution)
D/A converter:	1-bit DAC (20-bit resolution)
Sampling frequency:	Analog in; 48 kHz Digital in; 44.1kHz, 48kHz
Frequency response:	20Hz x 22kHz
Signal to noise ratio:	More than 97dB
Dynamic range:	More than 97dB
Total harmonic distortion:	Less Than 0.0035%
Analog inputs:	2 channels, +4dBs, 10kΩ, Balanced XLR 2 channels, +4dBs or -20dBs, 50kΩ, Unbalanced, PHONE type
Analog outputs:	2 channels, +4dBs, 1kΩ, Balanced XLR 2 channels, +4dBs or -20dBs, 1kΩ, Unbalanced, PHONE type
Digital IN/OUT:	Mini DIN 8 pin, AES/EBU & SPDIF (with option cables)
MIDI:	IN/OUT or THROUGH
Assignable control IN:	PEDAL1 / PEDAL2
Memory capacity:	Presets Memories; Bank1 99, Bank2 99 User Memories; Bank1 99, Bank2 99
Power requirements:	AC120V
Power consumption:	25W (Tentative)
Dimensions:	482(W) x 44(H) x 320(D) mm
Weight:	Approx. 5Kg

Optional Accessories

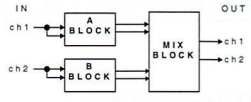
RKV-77US: Digital I/O cable

Structures

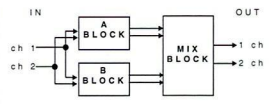
Series 1/2: The main blocks A and B are connected in a series so a high degree multi-effect combining the effect processing of each block is obtained. It is possible to rearrange the order of the main blocks A and B.



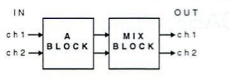
Dual: Independent effect processing of input from channels 1 and 2 in main blocks A and B. It provides the same effect as that obtained by using two kinds of instrumental sound to create and mix sound with a stereo input-output effector.



Parallel: Input signals from channel 1 and 2 are input in parallel into main blocks A and B. And in a case where reverb and flanger are used together in order to independently perform two kinds of effect processing and carry out mixing, beautiful reverberations are obtained.



Morphing: This is the structure used for morphing. Basically morphing is possible between effects in main block A, but it is also possible to do morphing of multi-effects based on a combination algorithm.



Multi-Effects Processor

DPS-V55

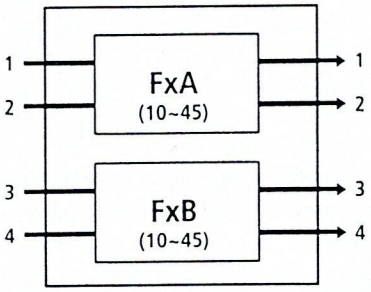
- 4-Channel capability offers you the flexibility to route the input signals in a variety of configurations. These configurable structures include: 2 inputs to 4 discrete outputs, 2 inputs to 2 outputs (x2) for independent "true" stereo processing, or 4 mono inputs to 4 mono or 2 pairs of stereo outputs
- Offers a wide variety of effects including Reverb, Delay, Chorus, Pitch Shift, and other effects including 3 Dimensional Programs
- Easy "dial up" access to 45 different effect algorithms
- Large Memory Bank featuring 200 factory presets programmed by top U.S. engineer/producers including Roger Nichols and Tom Jung, and 200 storable preset slots to store your own creations
- Search Function that lets you locate certain presets by specifying the type of effects desired
- Tap Function that lets you set tempo related parameters simply by tapping on the ENTER (TAP) button

Supplied Accessories
Operating Instructions (x1)
Effect Parameter Guide (x1)
Preset Memory Catalog (x1)

Specifications

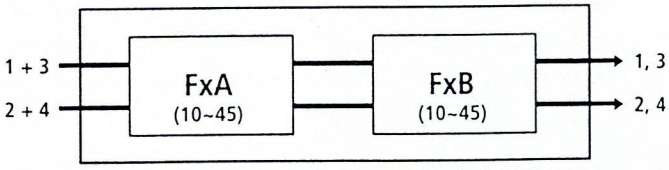
A/D converter:	20-bit resolution
D/A converter:	20-bit resolution
Sampling frequency:	48kHz
Input:	1/4" phone jack -10dBu or +4dBu
Output:	1/4" phone jack -10dBu or +4dBu
MIDI Input/Output:	Jack: 5-pin DIN (IN x 1, OUT/THRU x 1) OUT/THRU can be set to either OUT or THRU
Frequency Response:	20 Hz - 22 kHz (±0, -1 dB)
Signal-to-Noise Ratio:	Greater than 93 dB
Distortion:	Less than 0.005% (1 kHz)
Effect Algorithms:	45 (4 ch: 9, 2ch: 27, Mono-pair: 9)
Memory:	Preset 200 locations (numbers 001-200) User 200 locations (numbers 201-400)
Power Source:	AC 120 V, 60 Hz
Power Consumption:	11 W (120 V)
Dimensions:	19 x 3 1/2 x 11 1/8 inches (482 x 88 x 290 mm) (WxHxD not including projections)
Mass:	Approx. 9.6 lbs (3.6 kg)

Parallel (/) program



FxA and FxB are completely independent

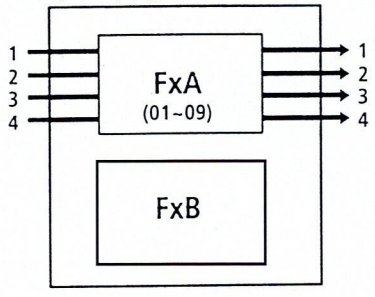
Serial (→) program



The sound from FxA is fed into FxB for further processing before being output.

If a 4ch effect is selected, the program contains only one effect (the other effect is automatically disabled).

Example of program containing a 4ch effect



FxA only

SECTION 10

Wired Microphones

Studio Condenser Microphones

C-800G Vacuum Tube Studio Microphone 10-1
C-800 Vacuum Tube Studio Microphone 10-1
C-48 Studio Microphone 10-2
ECM-23F3PR Electret Condenser Microphone 10-2

Electret Condenser Microphones

ECM-510 Interview Microphone 10-3
ECM-530 Unidirectional Microphone 10-3
ECM-531 Unidirectional Microphone 10-3
ECM-MS5 Stereo Microphone 10-4
ECM-999PR Stereo Microphone 10-4
ECM-MS957 Stereo Microphone 10-4
C-76 Shotgun Microphone 10-5
C-74 Shotgun Microphone 10-5
ECM-672 Shotgun Microphone 10-5
ECM-670 Shotgun Microphone 10-5
ECM-77 Series Omnidirectional Lavalier Microphones 10-6
ECM-66 Series Unidirectional Lavalier Microphones 10-6
ECM-55 Series Omnidirectional Lavalier Microphones 10-7
ECM-44 Series Omnidirectional Lavalier Microphones 10-7

Dynamic Microphones

F-780/9X Unidirectional Microphone 10-8
F-740/9X Unidirectional Microphone 10-8
F-730 Unidirectional Microphone 10-8
F-720 Unidirectional Microphone 10-8
F-710 Unidirectional Microphone 10-8

Miscellaneous

Accessories 10-9
Applications 10-9

Specifications

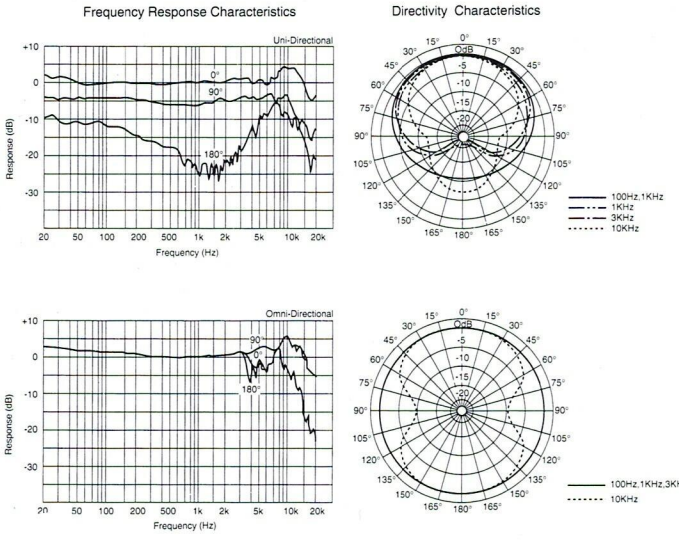
All models ..... 10-10 Through 10-16

Condenser Microphones

Vacuum Tube Studio Microphone

C-800G

- Designed for the highest possible sound quality
- Suitable for vocal recording in studios and film post-production houses
- High sensitivity of -33dB/Pa
- Low noise and low distortion due to built-in cooling system
- Large diaphragm capsule
- Electronically selectable directivity, either omnidirectional or cardioid

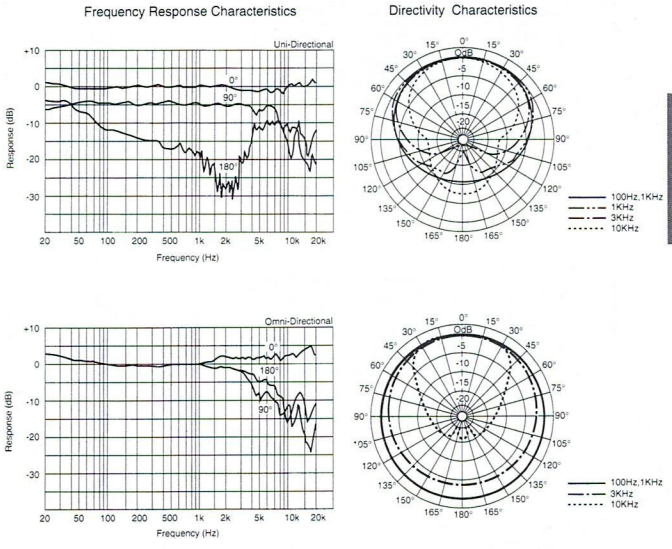


Required Accessory: AC-MC800G Power Supply

Vacuum Tube Studio Microphone

C-800

- Ideal for critical music recording applications for a wide variety of instruments
- Successor to the world famous Sony C-37A
- Wide dynamic range, with 150dB SPL input capability
- Warm, clear and natural reproduction of wide frequency range
- Mechanically selectable directivity, either omnidirectional or cardioid
- Large diaphragm capsule



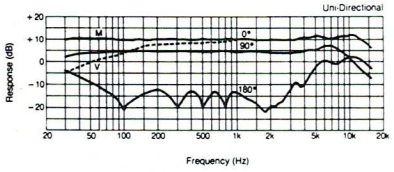
Required Accessory: AC-MC800G Power Supply

Studio Large Diaphragm Condenser Microphone

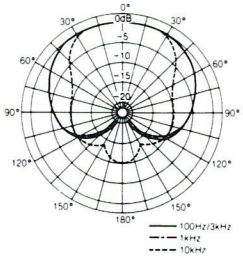
C-48

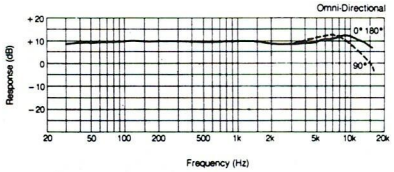
- Selectable directivity: unidirectional, omnidirectional or bidirectional
- 2-way powering: internal 9V battery (50 hours of continuous operation) or 48V phantom power
- Suitable for vocal and instrumental recording
- 10dB attenuation switch

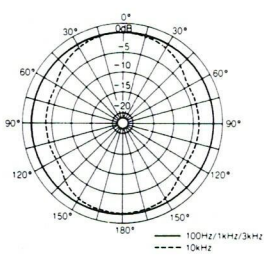
Frequency Response Characteristics

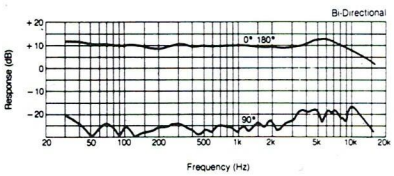


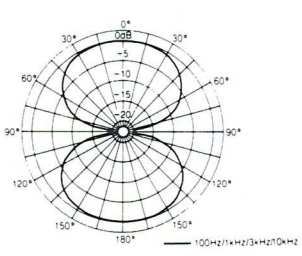
Directivity Characteristics





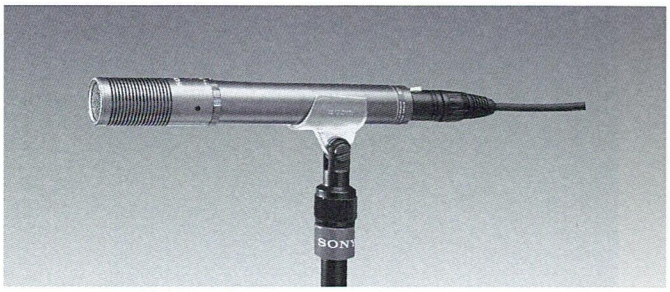






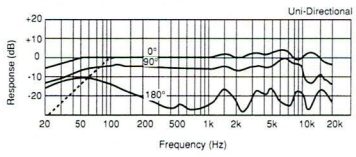
Electret Condenser Instrument Microphone

ECM-23F3PR

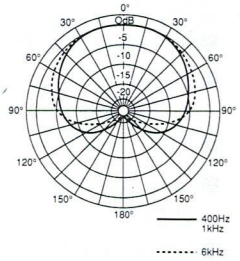


- Multi-purpose use: ex. Acoustic Guitar, Piano, Female Vocal
- High quality sound at economical price
- Low-cut filter
- AA-size battery operation

Frequency Response Characteristics

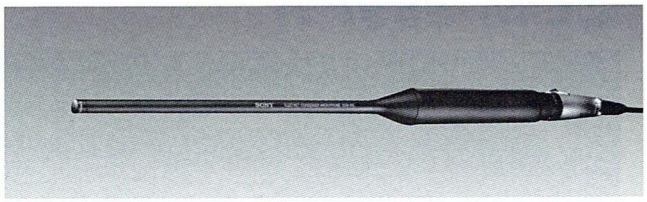


Directivity Characteristics



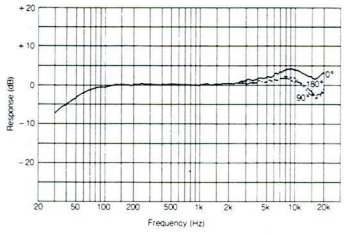
Interview Microphone

ECM-510

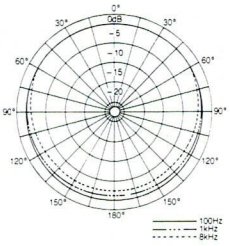


- Super-cardioid directional characteristic
- 2-way powering: internal AA battery (3,000 hours of continuous operation) or external phantom power
- 2-position low-cut filter
- Suitable for mounting on Sony Professional Video cameras

Frequency Response Characteristics

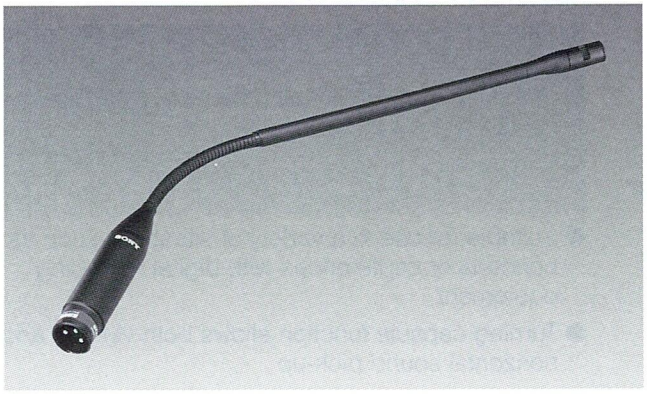


Directivity Characteristics



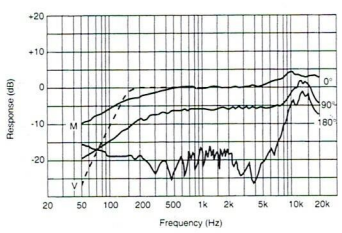
Unidirectional Lectern Mount Microphone

ECM-531

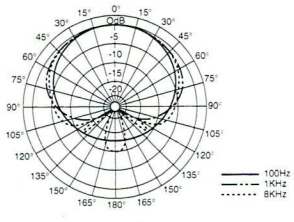


- Ideally suited for conference and lecture applications
- Flexible goose-neck for microphone positioning
- Equipped with a low-cut switch
- External power supply (DC 12V to 48V)
- Directly installed in conference tables and lecterns via an XLR connector

Frequency Response Characteristics



Directivity Characteristics

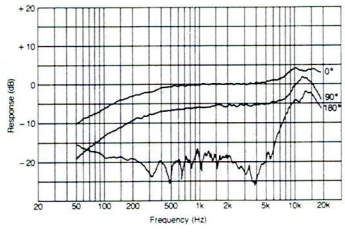


Unidirectional Tablemount Microphone

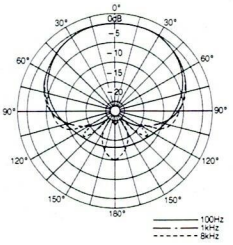
ECM-530

- Ideally suited for conference and lecture applications
- Compact and slim table-top microphone
- 2-way powering — AA-size battery or external power supply

Frequency Response Characteristics



Directivity Characteristics

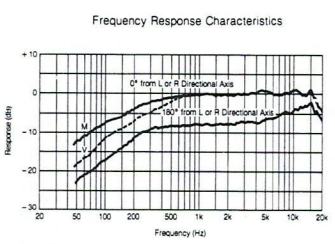


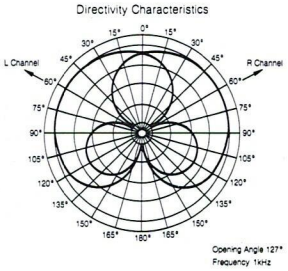
SECTION 10

Stereo Microphone

ECM-MS5

- Compact and light Mid-Side (MS) stereo microphone
- 6-position stereo angle selector (0° to 127°)
- 2-way powering — external power supply or battery operation with optional DC-MS5


Frequency Response Characteristics
0° from L or R Directional Axis
180° from L or R Directional Axis
Response (dB)
Frequency (Hz)



Optional Accessories

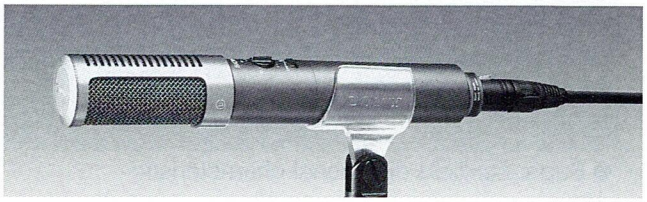
DC-MS5 Battery Adapter

Power requirements:	DC 1.5V (AA-size battery x1)
Connectors:	XLR-5-11C (with 1m cable) for microphone XLR-5-12C for MIC IN of mixer or recorder
Dimensions:	ø24 x 175.5mm (ø31/32 x 7″)
Weight:	300g (10.6 oz) with battery and cable

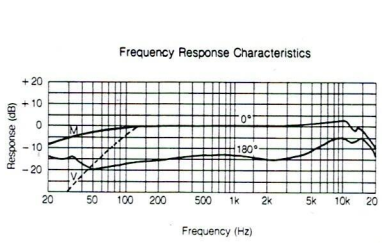
**With the use of the supplied microphone cable, the ECM-MS5 can be operated on any external power supply of DC12—48V. Stereo outputs can be obtained even when the power is supplied to only one of the L and R channel connectors.*

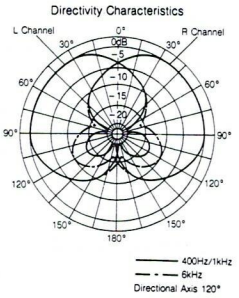
Stereo Microphone

ECM-999PR



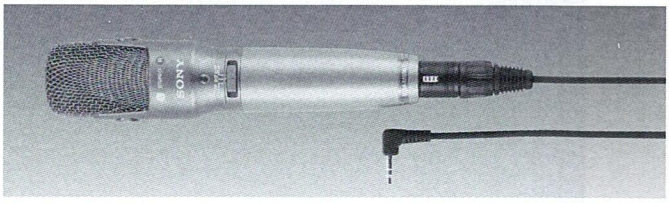
- Variable stereo angle (0° to 150°)
- Low-cut filter
- Battery operation





Stereo Microphone

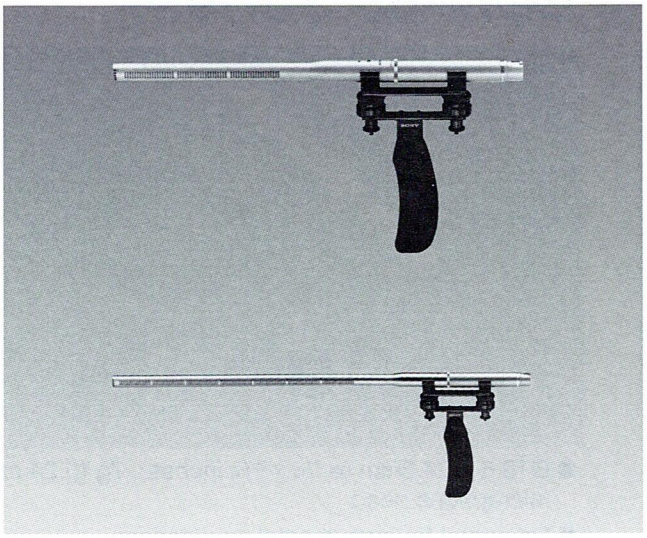
ECM-MS957



- Suitable for use in a variety of situations such as at concerts or conferences with digital recording equipment
- Turning capsule function allows both vertical and horizontal sound pick-up
- Mid-Side (MS) stereo system provides a natural sound pick-up delivering a stereo sound image with excellent clarity
- Directive angle (between left and right channels) can be set to 90 or 120 degrees according to the sound source
- Stereo miniplug output connector for use with portable recorders. 5-pin output connector for balanced connector compatibility

Shotgun Condenser Microphones

C-76 & C-74

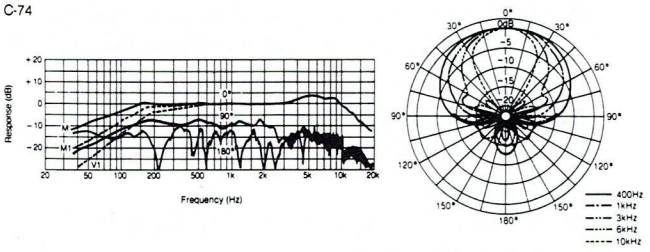


- Super-cardioid directional characteristics, rejecting indirect sound
- 2-way powering — internal battery (50 hours of continuous operation) or external power supply
- RF condenser design for low noise level

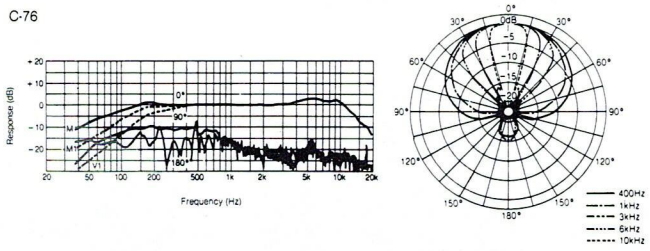
Frequency Response Characteristics

Directivity Characteristics

C-74

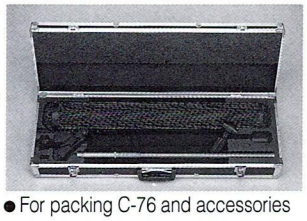


C-76



Optional Accessories

SC-76 Carrying Case



- For packing C-76 and accessories

SC-72 Carrying Case

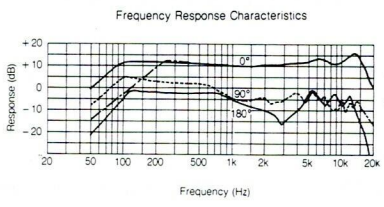
- For packing C-74, ECM-672 or ECM-MS5 and accessories

Short Shotgun Microphone

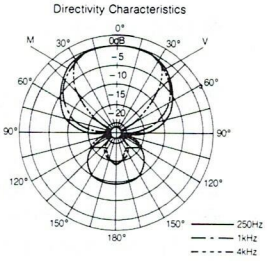
ECM-672

- Super-cardioid directional characteristics, rejecting indirect sound
- 2-way powering — internal battery (3,000 hours of continuous operation) or external power supply
- 2-position low-cut filter
- Suitable for mounting on Sony Betacam® and DXC series cameras

Frequency Response Characteristics

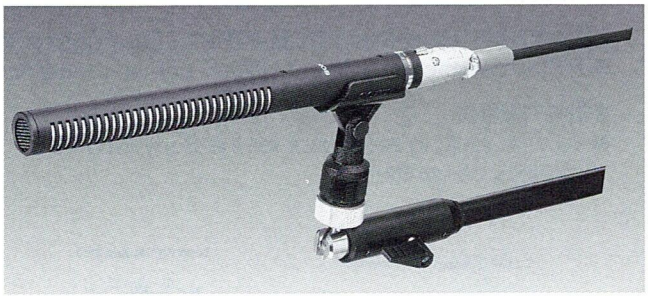


Directivity Characteristics



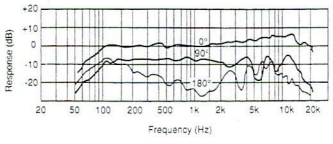
Short Shotgun Microphone

ECM-670

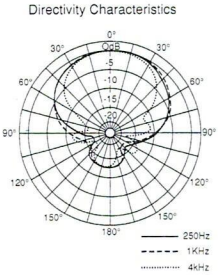


- Compact and lightweight design
- External power supply (DC12 ~ 48V) via an XLR connector
- A high-performance electret condenser microphone with super-cardioid characteristic
- Low-cut switch provides a low frequency roll-off for optimum

Frequency Response Characteristics



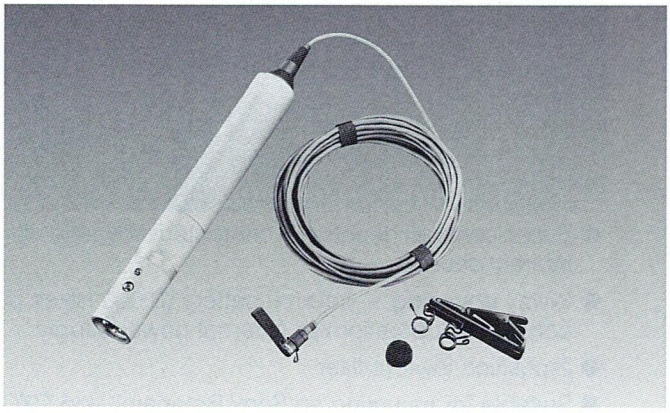
Directivity Characteristics



SECTION 10

Omnidirectional Lavalier Microphones

ECM-77 Series



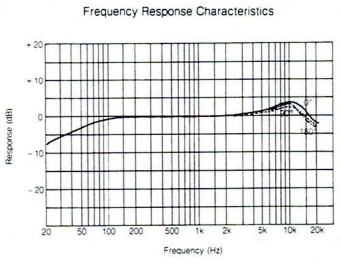
- ø 5.6 x 12.5mm (ø 1/4 x 1/2 inches), 1.5g (0.04 oz) microphone head
- High performance, frequency response 40Hz to 20,000Hz
- 2-way powering — AA-size battery or external phantom power

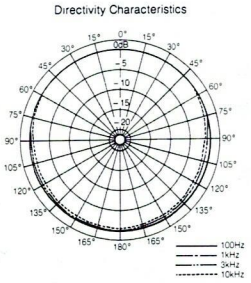
ECM-77B (Black Finish)
- Complete with in-line battery unit for 2-way powering Also available for wireless use only (no power supply)

ECM-77BC (Black Finish), **ECM-77FC** ("Flesh" Colored Finish)
- Fitted with 1.2m cable terminating in SMC9-4P connector for use with Sony wireless microphone system

ECM-77BPT (Black Finish), **ECM-77FPT** ("Flesh" Colored Finish)
- Pigtail connection, without battery unit or connector

ECM-77BMP
- With 1/8″ locking connector for the Sony WRT-805A wireless transmitter





Unidirectional Lavalier Microphones

ECM-66 Series

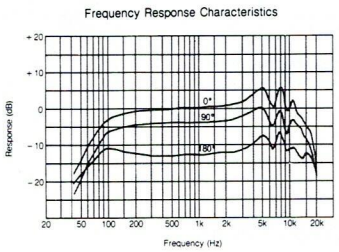
- Ø10.6 X 24.3mm (ø 7/16 x 31/32 inches). 7g (0.24 oz) microphone head
- Designed for instrumental applications
- 2-way powering — AA-size battery or external power supply
- 130dB SPL max. input sound pressure level

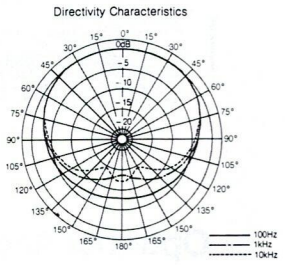
ECM-66B (Black Finish)
- Complete with in-line battery unit for 2-way powering Also available for wireless use only (no power supply)

ECM-66BC (Black Finish)
- Fitted with 1.2m cable terminating in SMC9-4P connector for use with Sony wireless microphone system

ECM-66BPT (Black Finish)
- Pigtail connection, without battery unit or connector

ECM-166BMP
- 1/8″ stereo locking connector for Sony WRT-805A wireless transmitter





Omnidirectional Lavalier Microphones

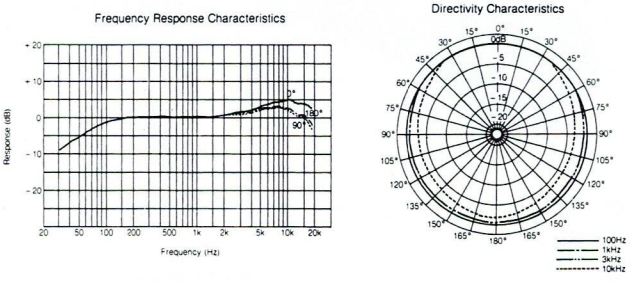
ECM-55 Series

- ø10.6 x 21mm (ø 7/16 x 27/32 inches), 6.5g (0.2 oz) microphone head
- Frequency response tailored for enhanced presence and improved voice quality in lavalier applications
- 2-way powering — AA-size battery or external power supply

ECM-55B (Black Finish)
- Complete with in-line battery unit for 2-way powering Also available for wireless use only (no power supply)

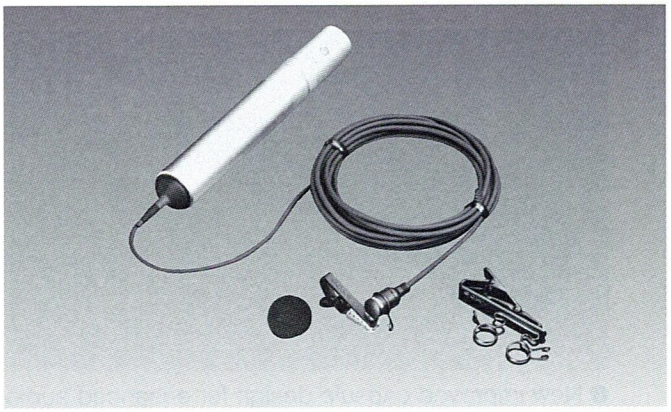
ECM-55BC (Black Finish)
- Fitted with 1.2m cable terminating in SMC9-4P connector for use with Sony wireless microphone system

ECM-55BPT (Black Finish)
- Pigtail connection, without battery unit or connector



Omnidirectional Lavalier Microphones

ECM-44 Series



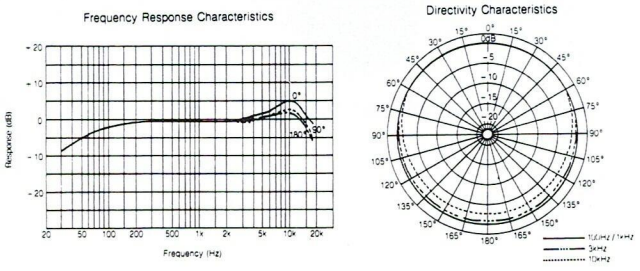
- Ø8.5 X 14.5mm (ø 11/32 x 19/32 inches). 2g (0.07 oz) microphone head
- Excellent cost/performance ratio
- Battery operation

ECM-44B (Black Finish)
- Complete with in-line battery unit for 2-way powering Also available for wireless use only (no power supply)

ECM-44BC (Black Finish)
- Fitted with 1.2m cable terminating in SMC9-4P connector for use with Sony wireless microphone system

ECM-44BPT (Black Finish)
- Pigtail connection, without battery unit or connector

ECM-44BMP
- with 1/8″ locking connector for the Sony WRT-805A wireless transmitter



Dynamic Microphones

UniDirectional Microphones

F-780/9X

- New improved capsule design for enhanced audio performance
- Designed specifically for critical vocal reproduction in music recording and live performance
- Rigid structure allows easy movement of capsule for higher sensitivity and reduced mechanical noise
- Urethane coating for extremely low handling noise
- Unidirectional polar pattern

UniDirectional Microphones

F-740/9X

- Improved capsule design for enhanced audio performance
- Suitable for both musical instruments and vocal reproduction
- Superb sound quality and high sensitivity
- Low handling noise

UniDirectional Microphones

F-720 & F-730

- F-720 for general applications, F-730 for vocal applications

UniDirectional Microphones

F-710

- Affordable multi-purpose dynamic mic with high sonic quality
- Suitable for voice and instrument pick-up
- High sensitivity

Microphone Accessories

CRS-3P Cradle Suspension

- Available screw: PF ½ - inch thread
- Supplied stand screw adaptor: NS ⅝ - inch thread
- Grip: Ø19 to 24mm (Ø ¾ to 13/32 inches)
- Weight: 150g (5.3 oz)

XLR-20C

20´ Microphone Cable

Application

Areas of Application	Model	Examples of Application
Music Recording	C-48	Strings
	ECM-66B	Close contact mic for Musical Instruments: Trumpet, Saxophone, Flute
	ECM-77B	Contact for Musical Instruments: Violin, Viola
	F-780/9X	Vocals
	F-740/9X	Musical Instruments and Percussion, Vocals
TV/Radio Station	C-48	Speech (Disc Jockey), Musical Instruments (Refer to Music Recording)
	C-76/74 ECM-672 ECM-MS5	Drama, ENG (Mounting on Camera), Ambience Sound for Live Sports, Interview
	ECM-510	ENG, Interview
	ECM-55B	Speech, Interview
	ECM-66/77	Musical Instruments (Refer to Music Recording)
Sound Reinforcement (Stage, Concert Hall, etc.)	C-48	Strings
	ECM-66/77	Contact for Musical Instruments (Refer to Music Recording)
	F-780/9x	Vocals
	F-740/9x	Musical Instruments and Percussion, Vocals
	C-76/74 ECM-672 ECM-MS5	Ambience Sound
Audio Production House Film Production House	C-76/74	Ambience Sound, Outdoor Location
	ECM-672	Ambience Sound, Outdoor Location, Mounting on Camera
	ECM-MS5 ECM-999	Stereo Ambience Sound
Video/Audio Production	F-720	Speech
	F-730	Vocal
	ECM-44B	Speech, Interview
	F-780/9X	Vocals, Musical Instruments
	F-740/9X	Vocals, Musical Instruments
Institutional Use (Assembly Hall, Enterprise, etc.)	ECM-530/531 F-720	Speech, Conference Recording, Interview, Paging, Public Address
	F-730	Speech (Hand-Held), On-Stage Vocal
	ECM-44B	Speech, Interview
	ECM-672	Mounting on Camera

Specifications

C-Series

Model		C-800G	C-800	C-48	C-76	C-74
Capsule type		Condenser	Condenser	Condenser	Condenser	Condenser
Frequency response (Hz)		20 ~ 18,000	20 ~ 20,000	30 ~ 16,000	40 ~ 16,000	40 ~ 16,000
Directivity		UNI/OMNI	UNI/OMNI	UNI/OMNI	UNI	UNI
Effective output level at 1kHz (dBm) (0dBm=1mW/1 Pa.) *1		-28.0 (Uni) -31.0 (Omnil)	-44.0 (Uni) -46.0 (Omni)	-38.8 (Uni)	-38.0	-38.0
Sensitivity (dB) (0dB=1V/1 Pa, at 1kHz)		-32.0 ± 2.0 (Uni) -35.0 ± 2.0 (Omni)	-45.0 ± 2.0 (Uni) -47.0 ± 2.0 (Omni)	-41.0 ± 2.0 (Uni)	-38.0 ± 2.0	-38.0 ± 2.0
Output impedance at 1kHz (balanced) (Ω ± 20%)		100	200	150	250	250
Dynamic range (dB)		≥ 113	≥ 126	≥ 106	≥ 112	≥ 112
Signal-to-noise ratio (dB) (A weighted, 1kHz, 1Pa.)		≥ 76 (Uni) ≥ 73 (Omni)	≥ 70(Uni) ≥ 68 (Omni)	≥ 72	≥ 80	≥ 80
Inherent noise *2 (dB SPL)		≤ 18 (Uni) ≤ 21 (Omni)	≤ 24 (Uni) ≤ 26 (Omni)	≤ 22	≤ 14	≤ 14
Induction noise from ext. magnetic field*2 (dB SPL/1 x 10^{-7}T)		≤ 0	≤ 0	≤ 0	≤ 5	≤ 5
Wind noise (dB SPL)*2		≤ 50	≤ 55	≤ 47	≤ 50	≤ 50
Max. input sound pressure level (dB SPL)*2		131 (Uni) 134 (Omni)	150 (Uni) 152 (Omni)	128	126	126
Mic attenuator (dB)		—	—	-10	—	—
Tone control	Low-cut	—	—	M,V	M, M_1, V_1	M, M_1, V_1
	High-cut	—	—	—	—	—
Power supply	Battery	—	—	9V	3CR-MIC	3CR-MIC
	Ext. power	—	—	O	O	O
Standard operating voltage (V) (approx.)	Battery	—	—	9	9	9
	Ext. power	—	—	DC48	DC24-48	DC24-48
Current drain (mA) (approx.)	Battery	—	—	≤ 5	≤ 5	≤ 5
	AC power	—	—	≤ 1	≤ 9	≤ 9
Dimensions (approx.)	mm	φ 57 x 191 x 237	φ 57 x 196	φ 54 x 229 x 40	φ 25 x 678	φ 25 x 427
	inch	φ 2¼ x 7⅜ x 9⅜	φ 2¼ x 7¾	φ 2¼ x 9⅛ x1⅝	φ 1 x 26 11/16	φ 1 x 16 13/16
Weight*5 (approx)	g	900	590	550	420	360
	lb/oz	2/0	1/5	1/4	0/14.8	0/12.7
Supplied accessories*3		Wind screen.....1 Cradle suspension..1 Microphone Stand screw adaptor.1 Holder.....1 (PF 1/2→NS 5/8).....1 Mic cable.....1 Carrying case.....1 G Sticker.....1 Frequency response chart.....2	Wind screen.....1 Cradle suspension...1 Stand screw adaptor.1 (PF 1/2→NS 5/8).....1 Mic cable.....1 Carrying case.....1 Screwdriver.....1 Frequency response chart.....2	Carrying case.....1 Stand adaptor.....2	Wind screen.....1	Wind screen.....1
Remarks		Vacuum Tube	Vacuum Tube	—	Shotgun Microphone	Shotgun Microphone

*1 1 Pa. = 10μbar

*2 0dB = 20μPa.

*3 Without the battery for condenser and electret condenser microphones.

Specifications

C-Series Continued

Model	C-800G	C-800	C-48	C-76	C-74
Microphone connector	CNR-01 type (7-pin)	XLR (6-pin)	XLR	XLR	XLR
Supplied cable	JIS CN01 type (7-pin)	XLR-6A-11C type ↔ XLR-6A-12C type	—	—	—
Cable length	8m	8m	—	—	—
Available receptacle	—	—	XLR	XLR	XLR
External power supply (AC-148F) or equivalent	—	—	Yes	Yes	Yes
Recommended Battery	—	—	9V	Sony 3CR-MIC	Sony 3CR-MIC
Battery life	—	—	50H	50H	50H
Supplied mic holder	—	—	—	—	—
Stand screw/ Mic holder screw	PF ½-inch thread	PF ½-inch thread	PF ½-inch thread	—	—
Supplied stand adaptor	NS ⅝-inch thread W ⅜-inch thread	NS ⅝-inch thread W ⅜-inch thread	NS ⅝-inch thread W ⅜-inch thread	—	—

Specifications

ECM-Series

Model		ECM-670	ECM-672	ECM-MS5	ECM-MS957	ECM-999PR
Capsule type		Electret Condenser	Electret Condenser	Electret Condenser	Electret Condenser	Electret Condenser
Frequency response (Hz)		70 ~ 16,000	50 ~ 16,000	70 ~ 20,000	50 ~ 18,000	20 ~ 20,000
Directivity		UNI	UNI	Stereo	Stereo	Stereo
Effective output level at 1kHz (dBm) (0dBm=1mW/1 Pa.)		-43.0	-42.0	-37.8 (0°) -34.8 (127°)	45 ±3dB	-51.0 (120°)
Sensitivity (dB) (0dB=1V/1 Pa., at 1kHz		-44.0dB ± 3.0	-42.0 ± 2.0	-40.0 ± 2.0 (0°) -37.0 ± 2.0 (127°)	-42 ±3dB	-48.0 (120°)
Output impedance at 1kHz (balanced) (Ω ± 20%)		200	250	150	600	480
Dynamic range (dB)		≥ 101	≥ 92	≥ 108	>90	≥ 104
Signal-to-noise ratio (dB) (A weighted, 1kHz, 1Pa.)		≥ 70	≥ 72	≥ 74 (0°) ≥ 72 (127°)	—	≥ 68 (120°)
Inherent noise *2 (dB SPL)		≤ 24	≤ 22	≤ 20 (0°) ≥ 22 (127°)	—	≤ 26 (120°)
Induction noise from ext. magnetic field*2 (dB SPL/1 x 10^{-7}T)		≤ 0	≤ 0	≤ 0	—	≤ 10
Wind noise (dB SPL)*2		≤ 60	≤ 45	≤ 54	—	≤ 50
Max. input sound pressure level (dB SPL)*2		125	114	130	115	130
Mic attenuator (dB)		—	—	—	—	—
Tone control	Low-cut	—	M.V.	M.V.	—	M.V.
	High-cut	—	—	—	—	—
Power supply	Battery power	—	AA	O	AA	AA
	Ext. power	O	O	O	O	No
Standard operating voltage (V	Battery	—	1.5	1.5	1.5	1.5
	Ext. power	DC 12-48	DC48	DC12-48Ÿ3	DC12-48	—
Current drain (mA)	Battery	—	≤ 0.3	≤ 1.75 x2 (DC 12V)	—	≤ 11.0
	AC power	≤ 2.4	≤ 0.5	≤2 x2 (DC 48V)	—	—
Dimensions (approx.)	mm	ϕ 21 x 226	ϕ 24 x 304	ϕ 47.5 x 212		ϕ 40 x 246
	inch	ϕ 27/32 x 9	ϕ 31/32 x 12	ϕ 1 7/8 x 8 3/8		ϕ 1 5/8 x 9 3/4
Mass*4 (approx.)	g	165	230	215	330	366
	lb/oz	0/5.8	0/8.1	0/7.6	11.7 oz.	0/1.3
Supplied accessories		Wind screen .....1 Microphone holder .....1 Microphone spacer .....1 Stand adaptor 2	Wind screen 1	Wind screen .....1 Microphone holder .....1 Microphone cable .....1 Stand adaptor 2	Desk Stand .....1 Wind screen 1 Microphone holder .....1 Microphone cable . .2 Stand adaptor. 2	Wind screen .....1 Microphone holder .....1 Microphone cable ..1 Stand adaptor 2
Remarks		Short Shotgun	Short Shotgun	MS Stereo	MS or XY Stereo	MS Stereo

Specifications

ECM-Series Continued

Model	ECM-670	ECM-672	ECM-MS5	ECM-MS957	ECM-999PR
Microphone connector	XLR	XLR	5 pin XLR	5 pin XLR	XLR
Supplied cable	—	—	5 pin XLR XLR	5 pin XLR to mini	XLR XLR (x2)
Cable length	—	—	3m	3m	2.5m
External power supply (AC-148F) of equivalent	Yes	Yes	Yes	No	No
Recommended Sony battery	—	AA	AA	AA	AA
Battery life (Approx.)	—	3,000 Hrs.	20 Hrs.	2,000 Hrs.	80H
Supplied mic holder	Yes	—	Yes	Yes	Yes
Stand screw/ Mic holder screw	PF 1/2 inch thread	—	PF 1/2 inch thread	PF 1/2 inch thread	PF 1/2 inch thread
Supplied stand adaptor	NS 5/8 inch thread W 3/8 inch thread	—	NS 5/8 inch thread W 3/8 inch thread	NS 5/8 inch thread W 3/8 inch thread	NS 5/8 inch thread W 3/8 inch thread
Mounting on CRS-3P	Yes	Yes	Yes	Yes	No

*1 *20dB SPL = 2 X 10^{-5} Pa.*

*2 *In some areas the battery may not be included. Refer to page 11-3 for interchangeable batteries.*

*3 *With the optional DC-MS5 DC power supply unit.*

*4 *Without the battery for condenser and electret condenser microphones.*

Specifications

ECM-Series Continued

Model		ECM-999PR	ECM-23F3PR	ECM-510	ECM-530	ECM-531
Capsule type		Electret Condenser	Electret Condenser	Electret Condenser	Electret Condenser	Electret Condenser
Frequency response (Hz)		20 ~ 20,000	20 ~ 20,000	40 ~ 17,000	70 ~ 18,000	70 ~ 18,000
Directivity		Stereo	UNI	OMNI	UNI	UNI
Effective output level at 1kHz (dBm) (0dBm=1mW/1 Pa.)		-51.0 (120°)	-47.0	-50.0	-46.8	-42.8
Sensitivity (dB) (0dB=1V/1 Pa., at 1kHz		-48.0 (120°)	-48.0	-50.0 ± 2.0	-49.0 ± 3.0	-49.0 ± 3.0
Output impedance at 1kHz (balanced) (Ω ± 20%)		480	200	250	150	60
Dynamic range (dB)		≥ 104	≥ 110	≥ 97	≥ 95	≥ 100
Signal-to-noise ratio (dB) (A weighted, 1kHz, 1Pa.)		≥ 68 (120°)	≥70	≥ 65	≥ 63	≥ 64
Inherent noise *1 (dB SPL)		≤ 26 (120°)	≥24	≤ 29 ≥ 22 (127°)	≤ 31	≤ 30
Induction noise from ext. magnetic field*2 (dB SPL/1 x 10^{-7}T)		≤ 10	≤ 5	≤ 5	≤ 5	≤5
Wind noise (dB SPL)*1		≤ 50	≤ 45	≤ 40	≤ 55	≤ 57
Max. input sound pressure level (dB SPL)*1		130	134	126	126	130
Mic attenuator (dB)		—	—	—	—	—
Tone control	Low-cut.	M.V.	M.V.	—	—	M.V.
	High-cut	—	—	—	—	—
Power supply options	Battery power	AA	AA	AA	AA	—
	Ext. power	No	No	Yes	Yes	Yes
Standard operating voltage (V	Battery	1.5	1.5	1.5	1.5	—
	Ext. power	—	—	DC12-48	DC12-48	DC12-48
Current drain (mA)		≤ 11.0	≤ 5	≤ 0.23	≤ 0.23	—
	power	—	—	≤ 2	≤ 2	≤ 2
Dimensions (approx.)	mm	ϕ 40 x 246	ϕ 27 x 190	Max. ϕ 23 ϕ 8.5 x 364	ϕ 12 x 326 - 448 ϕ 86 (Table stand)	ϕ 12 x 236 - 482
	inch	ϕ 1 5/8 x 9 3/4	ϕ 1 1/8 x 7 1/2	Max ϕ 29/32 ϕ 11/32 x 14 3/8	ϕ 1/2 x 12 7/8 - 17 3/8 ϕ 3 1/2 (Table stand)	ϕ 1/2 x 14 1/16 - 19
Mass*2 (approx.)	g	366	215	125	325	130
	lb/oz	0/1.3	0/7.6	0/4.4	0/11.5	0/4.6
Supplied accessories		Wind screen .....1 Microphone holder .....1 Microphone cable .....1 Stand adaptor 2	Wind screen .....1 Microphone holder .....2 Carrying case 1	Wind screen .....1 Microphone holder .....1 Stand adaptor 2	Wind screen 1	Wind screen 1
Remarks		MS Stereo	—	—	—	—

Lavalier Microphones

Holder Clips and Wind Screens

	Type	Finish	ECM-77	ECM-66	ECM-55	ECM-44	Remarks
Holder Clip	Single (Horizontal)	Black	SAD-H77B	SAD-H55B	SAD-H55B	SAD-H44B	10 pcs in each package
	Double (Horizontal)	Black	SAD-W77B	SAD-W55B	SAD-W55B	SAD-W44B	6 pcs in each package
	Single (Vertical)	Black	SAD-V77B	SAD-V55B	SAD-V55B	SAD-V44B	10 pcs in each package
	Safety Pin Type	Satin Nickel	SAD-S77	SAD-S55	SAD-S55	N.A.	6 pcs in each package
Power Supply Holder		Satin Nickel	SAD-B100	SAD-B100	SAD-B100	SAD-B100	3 pcs in each package
Wind Screen	Metal	Black	AD-R77B	AD-R66B	AD-R55B	AD-R44B	6 pcs in each package
	Urethane	6 colors	AD-C77	AD-C66	AD-C55	AD-C44	12 pcs in each package (6 colors x 2 pcs)

Specifications

		ECM-77B	ECM-66B	ECM-55B	ECM-44B
Capsule type		Electret Condenser	Electret Condenser	Electret Condenser	Electret Condenser
Frequency response		40 ~ 20,000Hz	70 ~ 14,000Hz	30 ~ 18,000Hz	40 ~ 15,000Hz
Directivity		OMNI	UNI	OMNI	OMNI
Sensitivity (0dB=1V/Pa. at 1kHz)		-52.0dB ± 2dB	-52.0dB ± 2dB	-52.0dB ± 2dB	-52.0dB ± 2dB
Output impedance at 1kHz		150Ω ± 20% (Balanced)	50Ω ± 20% (Balanced)	50Ω ± 20% (Balanced)	50Ω ± 20% (Balanced)
Inherent noise (0dB SPL = 20μ Pa.)		≤ 30dB SPL	≤ 29dB SPL	≤ 28dB SPL	≤ 32dB SPL
Microphone cable		1.2m	3m	3m	3m
Output connector		3.5mm 3 pole mini plug	XLR	XLR	XLR
Power supply	Battery	AA	AA	AA	AA
	Batery Life	Approx. 5,000H	Approx. 300H	Approx. 5,000H	Approx. 5,000H
	Ext. Power	DC48V	DC48V	DC48V	—
Dimensions	Microphone head	ø 5.6 x 12.5 mm (ø 1/4 x 1/2 inches)	ø 10.6 x 24.2 mm (ø 7/16 x 31/32 inches)	ø 10.6 x 21 mm (ø 7/16 x 27/32 inches)	ø 8.5 x 14.5 mm (ø 11/32 x 19/32 inches)
	Power Unit	ø 20.0 x 133 mm (ø 13/16 x 5 1/4 inches)	ø 20.0 x 163 mm (ø 13/16 x 6 1/2 inches)	ø 20.0 x 133 mm (ø 13/16 x 5 1/4 inches)	ø 20.0 x 126 mm (ø 13/16 x 5 inches)
Weight	Microphone head	Approx. 1.5g (0.053 oz)	Approx. 7g (0.25 oz)	Approx. 6.5g (0.23 oz)	Approx. 2g (0.07 oz)
Supplied accessories		S.H. holder clip.....1 S.V. holder clip .....1 M wind screen .....1 Microphone case 1	S.H. holder clip.....1 S.V. holder clip .....1 M wind screen .....1 Microphone case 1	S.H. holder clip.....1 S.V. holder clip .....1 M wind screen .....1 Microphone case 1	S.H. holder clip.....1 U wind screen .....1 Microphone case 1

Specifications

F-Series Dynamic Microphones

Model		F-710	F-720	F-730	F-740/9X	F-780/9X
Capsule type		Dynamic	Dynamic	Dynamic	Dynamic	Dynamic
Frequency response (Hz)		70 ~ 15.000	50 ~ 13.000	50 ~ 13.000	50 ~ 18.000	50 ~ 18.000
Directivity		UNI	UNI	UNI	UNI	UNI
Effective output level at 1kHz (dBm) (0dBm=1mW/1Pa.)		-56.0	-60.0	-59.0	-56.0	-55.0
Sensitivity (dB) (0dB=1V/1 Pa., at 1kHz)		-54.0 ± 3.0	-57.0 ± 3.0	-56.0 ± 3.0	-54.0 ± 2.0	-53.0 ± 3.0
Output impedance at 1kHz (balanced) (Ω ± 20%)		400	500	500	400	400
Dynamic range (dB)		—	—	—	—	—
Signal-to-noise (dB) (A-weighted, 1kHz, 1 Pa.)		—	—	—	—	—
Inherent noise *1 (dB SPL)		—	—	—	—	—
Induction noise from ext. imagnetic field*1 (dB SPL/1 x 10^{-7} T)		≤5	≤10	≤10	≤5	≤5
Wind noise (dB SPL)*1		≤55	≤55	≤45	≤50	≤50
Max. input sound pressure level (dB SPL)*1		—	—	—	—	—
Dimensions (approx.)	mm	ø54 x 177	ø37.6 x 160	ø44.4 x 166	ø51 x 165	ø51 x 165
	inch	ø2 1/4 x 7	ø1 1/2 x 6 3/8	ø1 3/4 x 6 5/8	ø2 1/8 x 6 1/2	ø1 1/8 x 6 1/2
Mass (approx.)	g	250	260	250	290	290
	lb/oz	0/8.8	0/9.2	0/8.8	0/10.2	0/10.2
Supplied accessories		Microphone holder .....1 Stand adapter 2	Microphone holder .....1 Stand adapter 2	Microphone holder .....1 Stand adapter 2	Microphone holder .....1 Stand adapter 2	Microphone holder .....1 Stand adapter 2
Microphone connector		XLR	XLR	XLR	XLR	XLR
Supplied mic holder		Yes	Yes	Yes	Yes	Yes
SAD -700 optional mic holder		Yes	—	—	Yes	Yes
Standard screw/ Mic holder screw		PF 1/2 inch thread	PF 1/2 inch thread	PF 1/2 inch thread	PF 1/2 inch thread	PF 1/2 inch thread
Supplied stand adaptor		NS 5/8 inch thread W 3/8 inch thread	NS 5/8 inch thread W 3/8 inch thread	NS 5/8 inch thread W 3/8 inch thread	NS 5/8 inch thread W 3/8 inch thread	NS 5/8 inch thread W 3/8 inch thread
Mounting on CRS-3P		Yes	Yes	Yes	Yes	Yes

*1 *0 dB SPL = 2 X 10⁻⁵ Pa.*

SECTION 11

UHF Wireless Microphone Systems

Transmitters (Hand-held)

WRT-867A(CH) Dynamic Microphone....11-1
WRT-830A68 Condenser Microphone....11-1
WRT-810A(CH) Dynamic Microphone....11-1
WRT-807A(CH) Dynamic Microphone....11-1
WRT-800A68 Condenser Microphone....11-2
WRT-808A(CH) Plug-on UHF Microphone....11-2

Transmitters (Body-pack)

WRT-860A(CH) UHF Synthesized Transmitter....11-3
WRT-822A(CH) UHF Synthesized Transmitter....11-3
WRT-805A(CH) Beltpack Transmitter....11-3

Receivers (Rack-mount)

WRU-806A(CH) UHF Diversity Tuner Module....11-4
MB-806A UHF Diversity Tuner Frame....11-4
WRR-802A(CH) UHF Diversity Tuner....11-4

Receivers (Portable)

WRR-855A(CH) Portable UHF Diversity Tuner....11-5
WRR-810A(CH) Portable UHF Tuner....11-5
WRR-805A(CH) Portable UHF Tuner....11-5
BTA-801 WRR-855 mounting adapter....11-5
CA-WR855 WRR-855 mounting adapter....11-5

Packaged Systems

WRT-8GP68 Guitar Wireless System....11-6
WRT-8HP68 Hand-held Wireless System....11-6
WRT-8LP68 Lavalier Wireless System....11-6

A suffix designation of (CH) or 68 indicates channel availablity. "(CH)" is available on channels 64, 66 or 68. "68" is only available on channel 68.

Accessories

WD-880A UHF Antenna Divider....11-7
WD-820A UHF Antenna Divider....11-7
AN-820A UHF Antenna....11-7
ICF-SC1PC "WaveHawk"™ Portable RF Scanner....11-7
ECM-121BMP/122BMP, ECM-44BC/BMP/BPT, ECM-55BC/BMP/BPT, ECM-66BC/BMP/BPT, ECM-77BC/BMP/BPT, ECM-310BMP....11-8
SCM-800 Carrying Case for Package System....11-9
LCS-T805 Soft Case for WRT-805A....11-9
GC-07MP/1 Guitar Cable....11-9
RK-800A Rack-mount Kit....11-9
K-1324 Solderable Plug Adapter....11-9
Specifications....11-10 - 11-15

UHF Synthesized Wireless Microphone System

UHF Synthesized Wireless Microphone

WRT-867A(CH)*X

- Easy access to up to 94 selectable frequencies in the 800mHz UHF band range
- PLL synthesized control transmission
- Uni-directional dynamic microphone capsule in a resilient body structure for extremely high quality sound
- Incorporates a high quality edgewise-winding voice coil with lightweight CCAW (Copper Clad Aluminum Wire) and AlNiCo magnet which provides powerful, crisp and clear sound as well as presence in the middle and high frequency range for critical vocal recording.
- 4 hours continuous operation with 1 AA-size battery
- LED power monitor
- Compander system for longer working distance
- 10mW transmitting power

UHF Synthesized Wireless Microphone

WRT-810A(CH)*

- Easy access to up to 94 selectable frequencies in the 800mHz UHF band range
- PLL synthesized control transmission
- Selectable RF output - either 2.5 or 10mW
- 8 hours continuous operation with 2 AA-Size (LR6) Alkaline Batteries
- Easy-to-read LCD display
- Rugged housing, unique cosmetic design
- Compander system
- Built-in talk switch

UHF Synthesized Wireless Microphone

WRT-830A68

- Easy access to up to 94 selectable frequencies in the 800mHz UHF band range
- High quality sound for vocals
- Simultaneous multi-channel operation
- PLL synthesized control transmission
- Low handling noise due to the electret capsule
- Selectable RF output
- RF carrier with tone signal
- Easy-to-read LCD indication
- Rugged housing, unique cosmetic design
- 8 hours continuous operation with 2 AA-size alkaline batteries

UHF SynthesizerTransmitter

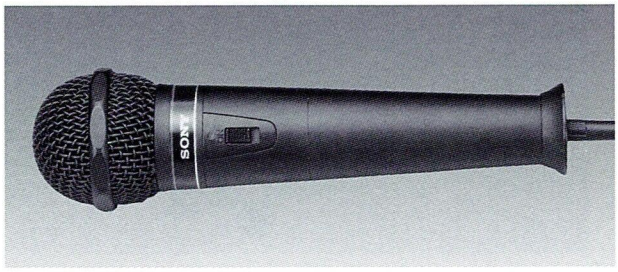
WRT-807A(CH)*

- High sound quality for vocals - powerful, crisp and clean sound as well as presence in the low and mid frequency range
- Dynamic microphone capsule, same as used in the Sony F-780 professional vocal microphone
- LCD for display of channels, attenuator and accumulated hours
- Up to 5 hours of continuous operation with a single AA-size (LR6) battery
- 10 mW RF power output
- Battery alarm transmitted to compatible receivers
- Newly-developed lockable power switch to prevent from accidental misoperation

Transmitters

Handheld Microphone Transmitter

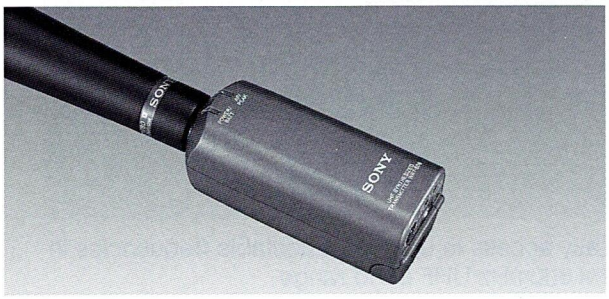
WRT-800A68



- Unidirectional electret condenser capsule for outstanding sensitivity and response
- Battery life indicator on tuner
- Up to 12 hours with a single AA alkaline battery at full output power
- RF power output: 5mW
- Ergonomic grip
- High efficiency whip antenna
- Easily detachable mic holder (supplied)

UHF Synthesized Wireless Microphone

WRT-808A(CH)*



- Plug-on transmitter
- Compact and lightweight body
- Selectable RF output
- Smooth and steady connection
- Variable input attenuator
- Informative LED battery alarm
- Remote battery alarm on tuners
- Audio input indicator
- 4 hours continuous operation

Please contact your Sony representative for specifying frequency order numbers 64, 66 or 68.

UHF Synthesized Transmitter

WRT-860A(CH)*

- Easy access to up to 94 selectable frequencies in the 800mHz UHF band range
- Miniature, lightweight design
- Rugged construction
- Detachable antenna
- Battery level meter
- Operates on 2 AA-size batteries
- 20mW transmitting power

UHF Synthesized Transmitter

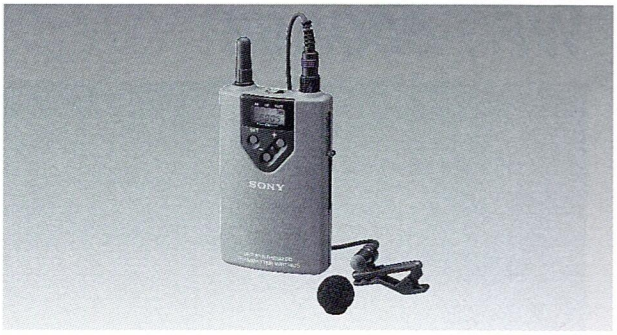
WRT-822A(CH)*

- Easy access to up to 94 selectable frequencies in the 800mHz UHF band range
- Compact and lightweight
- PLL synthesized control transmission
- Lavalier microphones capability
- 8 hours continuous operation with 2 AA-size alkaline batteries
- Easy-to-read LCD display
- Transmits battery alarm to tuner

Please contact your Sony representative for specifying frequency order numbers 64, 66 or 68.

BeltpackTransmitter

WRT-805A(CH)*



- Smoothly tapered body pack with compact, lightweight design
- Battery life indicator on tuner
- LCD display of channel, attenuator and accumulated time
- Up to 6 hours with a single AA alkaline battery at full output power
- RF power output: 10mW
- 3-pole mini phone jack with lock mechanism
- High efficiency whip antenna
- INPUT (-4dBV/-60dBV) level and PHASE switches for guitar and lavalier microphone options; GC-07MP/1 Guitar Cable, ECM-44BMP Electret Condenser Microphones
- Available on channel 64, 66 and 68

Optional Accessories

LCS-T805

- Leatherette case for guitar strap/belt mounting

GC-07 MP/1

- Guitar Adapter Cable

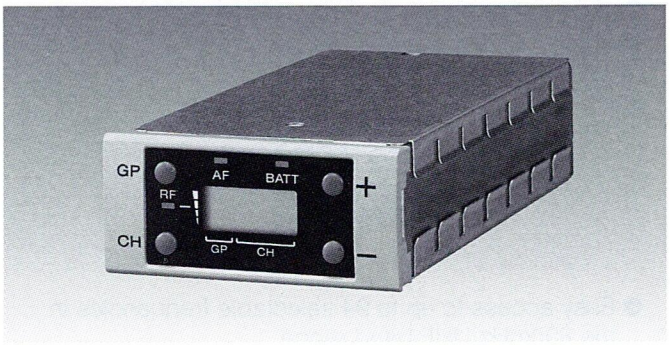
SCM-800

- Carrying case

Receivers

UHF Synthesized Tuner Module

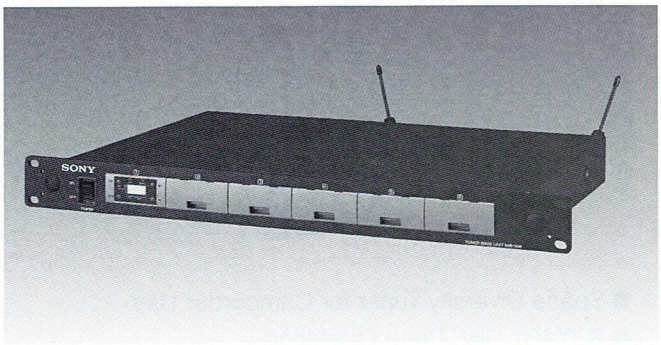
WRU-806A(CH)*



- Dedicated plug-in tuner for WRR-801A68, MB-801A, MB-806A
- Space Diversity reception
- 94 wireless channels can be selected
- Available on channels 64, 66 & 68

UHF Tuner Frame/Antenna Divider

MB-806A



- 19″ rack mount tuner frame
- Accommodates up to 6 "WRU" UHF tuner modules
- Individual XLR Balanced output
- XLR Balanced MIX OUT
- Built-in Antenna Divider with 9V DC power
- Line/MIC level switch

UHF Synthesized Diversity Tuner

WRR-802A(CH)*

- Half 19 inch rack width, 1U height
- Single-channel Space Diversity Tuner
- LED and LCD display of channel and transmitter battery alarm
- Output volume control
- Balanced output on XLR connector
- Front-mounted antennas
- 94 wireless channels can be selected

UHF Synthesized Diversity Tuner

WRR-855A(CH)*

- Space Diversity Tuner for Camcorder Use
- 800MHz UHF Band Operation
- Phase Locked Loop (PLL) Synthesized Frequency Tuning
- Compact design and lightweight only 280g (11 oz)
- Water resistant structure
- Easy to mount on Sony camcorders
- Convenient Factory-Programmed Channel Plan
- Squelch circuitry operated by ultrasonic tone for positive transmitter reception
- Muting RF Level 10dBμ or OFF

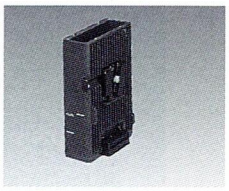
Accessories

BTA-801

- The BTA-801 mounting adaptor enables a WRR-855A to be mounted on a Sony camcorder. By incorporating a DC - DC converter, the BTA-801 can supply DC power from a camcorder to the WRR-855A.

CA-WR855

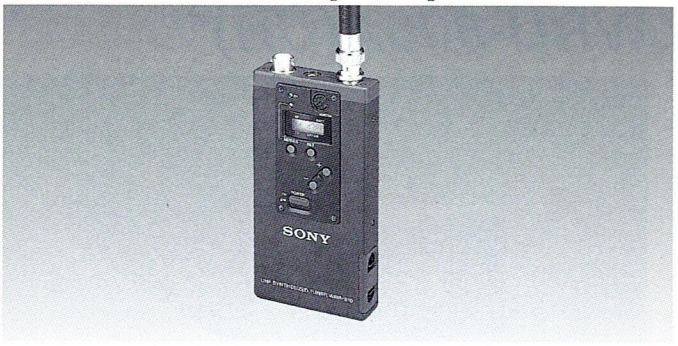
- The CA-WRR855 Camera Adaptor enables a WRR-855A to be mounted on Sony DSR 300/500WS DVCAM™ camcorders with direct audio/power connection interfaces.



Please contact your Sony representative for specifying frequency order numbers 64, 66 or 68.

UHF Synthesized Tuner

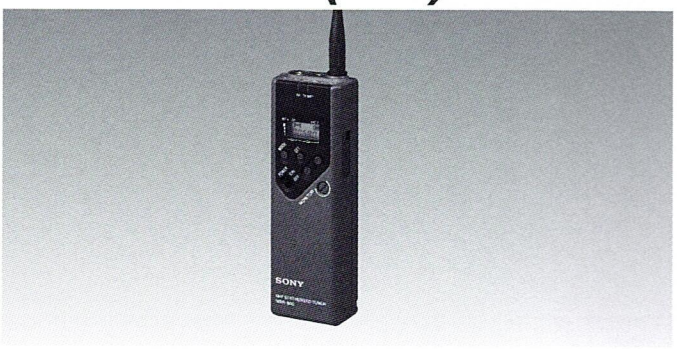
WRR-810A(CH)*



- Easy access to up to 94 selectable frequencies in the 800mHz UHF band range
- PLL synthesized control transmission
- Pre-programmed channel plans
- Easy-to-read LCD indication
- Switchable muting RF level
- Compact, lightweight and easy to mount on Betacam SP camcorders
- Up to 6 hours of operation with AA-size batteries
- Output sound can be monitored with supplied earphone
- Tone squelch circuitry control for accurate audio reproduction
- Capable of supplying power from camcorders with a DC output

UHF Synthesized Tuner

WRR-805A(CH)*



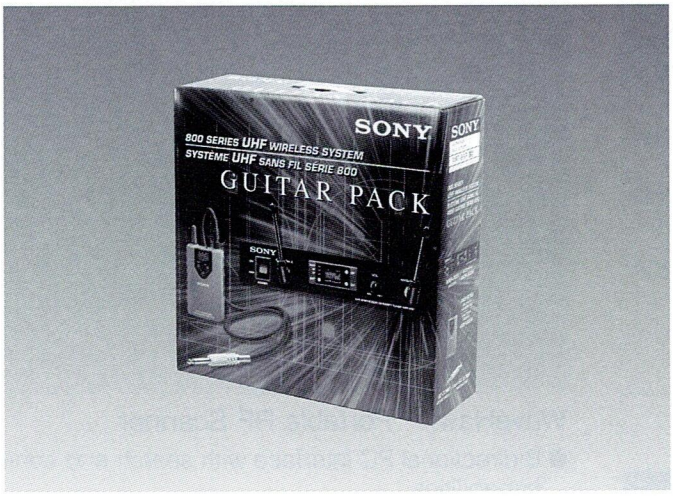
- 800MHz UHF band operation
- Affordable price
- Flexible mounting on any camcorder
- Valuable information on LCD and LED, including AF, RT, ARP, CH and battery status of TX
- Headphone monitor output with level control
- 6 hours continuous operation w/2 "AA" alkaline batteries
- Muting on/off switch
- Ultra-compact & lightweight

Freedom™

Freedom Series UHF Wireless Microphone System Packages

Guitar Package

WRT-8GP68



Package Includes:

1 – WRR-800A68 Diversity Receiver

1 – WRT-805A68 Body Pack Transmitter

1 – GC-0.7MP/1 Guitar Cable

Handheld Package

WRT-8HP68

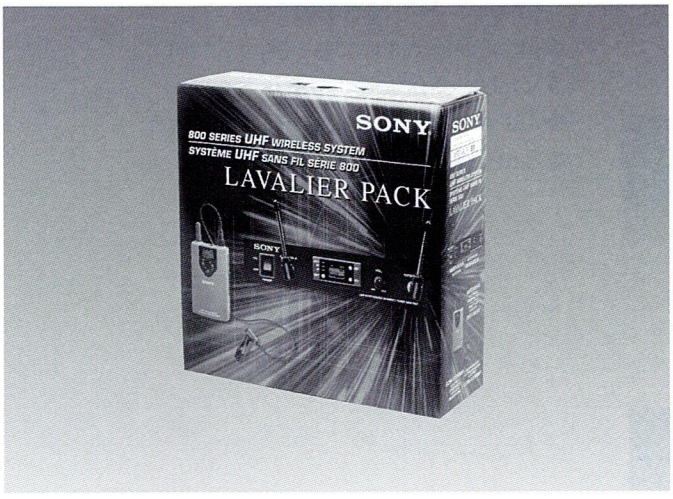
Package Includes:

1 – WRR-800A68 Diversity Receiver

1 – WRT-805A68 Hand Held Transmitter

Lavalier Package

WRT-8LP68



Package Includes:

1 – WRR-800A68 Diversity Receiver

1 – WRR-805A68 Body Pack Transmitter

1 – ECM-122BMP Lavalier Mic

UHF Antenna Divider

WD-880A

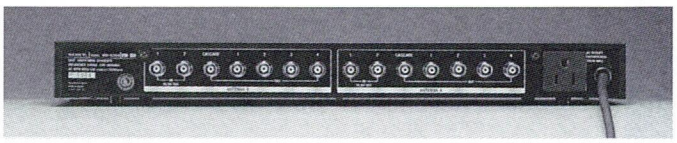
- Maximum 42 channels of simultaneous operation in the 800MHz UHF band range, making this system ideal for use in large size theaters, playhouses and halls.
- Band pass filters for high stability and reliability
- DC 9V or 12V switchable power supply for the AN-820A UHF antenna

UHF Antenna Divider

WD-820A

- Permits connection of up to 4 diversity distribution outputs when using a pair of AN-820A antennas. The WD-820A can receive RF signals and distribute them to up to four WRR-840A, WRR-850A, WRR-801A, WRR-800A, or MB-806 tuners.
- Permits connection of up to 4 AN-820A antennas, expanding the operating area.

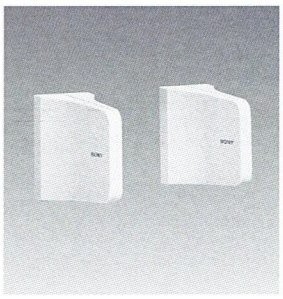
WD-820A (rear panel)



UHF Antenna

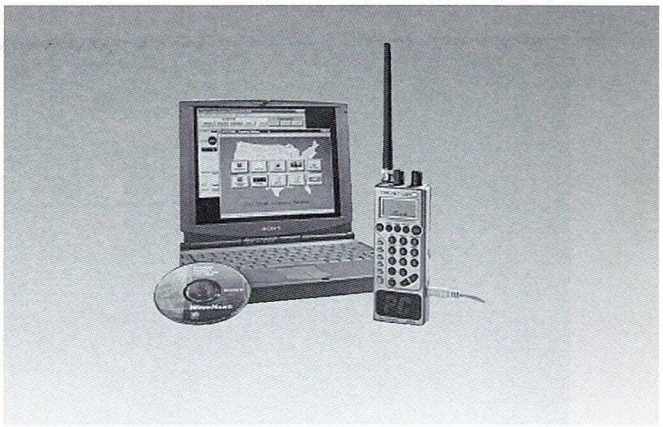
AN-820A

- Incorporates an amplifier which compensates for signal deterioration caused by cable transmission and distribution.
- Easy Installation on a Wall or in a Microphone Stand with the Supplied Stand Adapter
- Unique and Inconspicuous Design
- LED Indication for Installation Check
- External Power Supply Provided from the WRR-801A, WRR-800A, MB-806, WD-880A. WRR-820A/840A or WD-820A via optional Coaxial



Portable RF Scanner

ICF-SC1PC



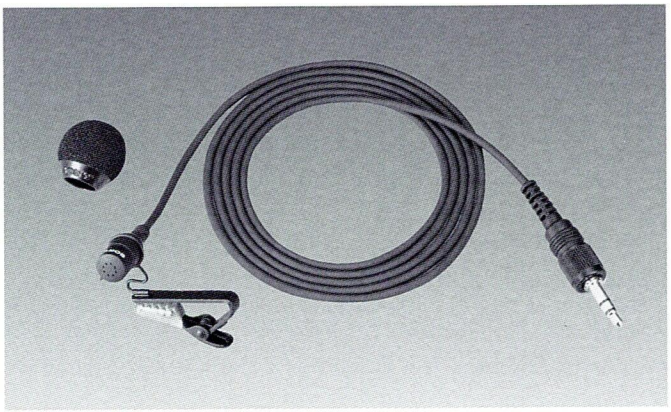
WaveHawk™ Portable RF Scanner

- Bidirectional PC interface with search and control capabilities
- Supplied CD-ROM lists all receivable frequencies throughout the U.S.
- Use CD-ROM with PC interface to search frequencies and to create files using a variety of search mode options
- Scans all frequencies allowed by the FCC from 25mHz to 1,300 mHz
- PLL synthesized scanning
- 300 channel memory
- One-button access to police, air, fire/emergency, weather, marine, FM, and TV PSBS
- Intelligent active memory system
- Variety of programmable features
- AM and narrow/wide FM reception
- Supplied frequency guidebook

Microphones

Electret Condenser Microphone

ECM-121BMP/122BMP



- Omnidirectional
- Mic head ø 8.5 x 17mm (ø 11/32 x 11/16 inches)
- Mass (microphone only, without cable) approx. 3g (0.1 oz)
- 3-pole mini phone plug with lock mechanism
- Microphone cable: 1.2m (47 1/4 inches) for ECM-122BMP
- Microphone cable: 0.2m (7 7/8 inches) for ECM-121BMP

ECM-44BMP, BC, BPT
Electret Condenser Microphone
- Omnidirectional Capsule

ECM-55BMP, BC, BPT
Electret Condenser Microphone
- Omnidirectional Capsule

ECM-66BC, BPT
Electret Condenser Microphone
- Omnidirectional Capsule

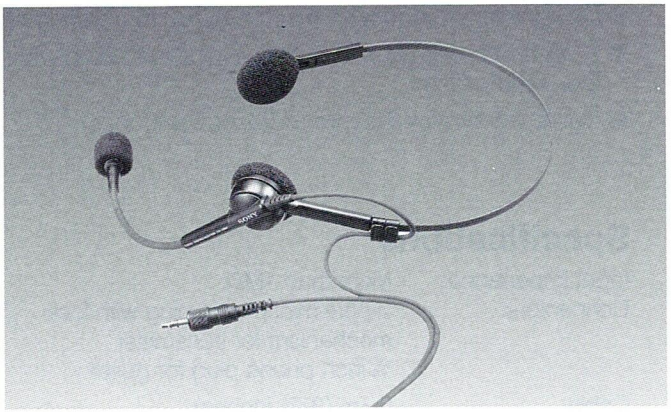
ECM-77BMP, BC, BPT
Electret Condenser Microphone
- Omnidirectional Capsule

ECM-166BMP, BC
Electret Condenser Microphone
- Unidirectional Capsule

*BMP – For use with WRT-805A
*BC – For use with WRT-820A/860A
*BPT – For use with other wireless systems

Electret Condenser Microphone

ECM-310BMP



- Headset-style microphone
- Fitted with a wide-cardioid capsule for sensitivity and noise rejection
- Designed for use with WRT-805A68 UHF Synthesized Transmitter
- Adjustable hinge and goose-neck for perfect positioning
- Unobtrusive, anti-slide headband
- 3-pole mini phone plug with lock mechanism
- Microphone cable: 1.2m (47 1/4 inches)

Wireless Series Accessories

Guitar Cable

GC-07MP/1

- Designed to connect an electric guitar to a transmitter
- 1/4 inch phone plug to a 3-pole mini phone plug with lock mechanism
- Cable ø 5.5mm x 700mm (ø 7/32 x 27 5/8 inches)

Specifications

Input impedance:	More than 1MΩ
Connectors:	3-pole mini phone plug with lock mechanism for transmitter 1/4 inch phone plug for guitar
Cable:	0.7m (27 5/8 inches)
Total mass:	Approx. 70g (2.47 oz)

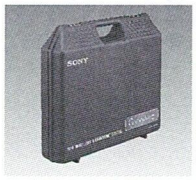
RK-800A

Rack Mount Kit

SCM-800

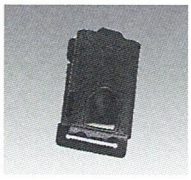
Carrying Case

- Capacity to hold WRT-805A, WRT-807A, WRR-802A Lavalier Microphones and Accessories



LCS-T805

Soft Case for WRT-805A UHF Synthesized Body Pack Transmitter



K-1324

Solderable 1/8″ Locking Plug

Specifications

WRT Handheld Series

Model	WRT-867A(CH)X	WRT-830A68	WRT-810A(CH)
Receiving Frequency	770MHz-806MHz 94 channels *	794MHz-806MHz 94 channels, selectable	770MHz-806MHz 94 channels *
Oscillator	Crystal-controlled PLL synthesizer	Crystal-controlled PLL synthesizer	Crystal-controlled PLL synthesizer
Tone signal	Approx. 32kHz (for tone squelch control)	Appox. 32kHz (for tone squelch control)	Appox. 32kHz (for tone squelch control)
RF power output	110KF3E	10mW or 2.5mW, selectable	10mW or 2.5mW, selectable
Frequency stability	10mW	Within ±0.005%	Within ±0.005%
Antenna	Within ±0.005%	1/4 whip antenna	1/4 whip antenna
Pre-emphasis	Helical	50µs	50µs
Reference deviation	50µs	±5kHz	±5kHz
Maximum deviation	±5kHz	±40kHz	±40kHz
Frequency response	50Hz~15,000Hz	70Hz~15,000Hz	100Hz~13,000Hz
Signal-to-noise ratio	>60dB (A-weighted)	60dB (A-weighted)	60dB (A-weighted)
Modulation distortion	–	–	1.5%
Attenuator adjustment range	–	21dB, variable in 3dB steps	21dB, variable in 3dB steps
Max. input sound pressure level	142dB SPL (w/ 12dB attenuator)	142dB SPL	151dB SPL
Microphone capsule	Dynamic	Electret condenser	Dynamic
Max. input level	–	–	–
Directivity	Uni-directional	Uni-directional	Uni-directional
Operating voltage	1.5V, AA size alkaline battery (x1)	3V, LR6 AA size alkaline battery (x2)	3V, LR6 AA size alkaline battery (x2)
Power consumption	Less than 200mA (at 1.5V)	170mA	170mA
Battery life	Approx. 4 hours at 25˚C w AA akaline batt.(x1)	Approx. 8 hours AA alkaline batteries	Approx. 8 hours AA alkaline batteries
Dimensions	ø51 x 195mm	ø48 x 238mm (ø1 15/16 x 9 3/8 inches)	ø48 x 238mm (ø1 15/16 x 9 3/8 inches)
Weight	320g w/battery	Approx. 300g (11 oz) w/batteries	Approx. 300g (11 oz) w/batteries
Supplied accessories	Microphone holder, Stand adaptor	Microphone holder, Stand adaptor	Microphone holder, Stand adaptor

**Selectable within 12 mHz range*

Specifications

WRT Handheld Series continued

Model	WRT-807A(CH)	WRT-800A68	WRT-808A(CH)
Receiving Frequency	770MHz-806MHz 94 channels *	794MHz-806MHz 94 channels, selectable	770MHz-806MHz 94 channels *
Oscillator	Crystal-controlled PLL synthesizer	Crystal-controlled PLL synthesizer	Crystal-controlled PLL synthesizer
Tone signal	32.768kHz	32.768kHz	32.768kHz
RF power output	10mW	5mW	110K F3E
Frequency stability	-	Within ±0.005%	Within ±0.005%
Antenna	1/4λ wave length wire antenna	1/4 wave length helical antenna	Internal
Pre-emphasis	50µs	-	50µs
Reference deviation	±5kHz (94dBSPL, 1kHz input)	±5kHz (at 1kHz)	±5kHz (-60dBV, 1 kHz input)
Maximum deviation	±40kHz	-	±40kHz
Frequency response	50Hz~15,000Hz	100Hz~15,000Hz	70Hz~15,000Hz
Signal-to-noise ratio	57dB or more (A-weighted)	57dB (A-weighted)	57dB or more (A-weighted)
Modulation distortion	<1%	N/A	N/A
Attenuator adjustment range	0-21 dB (3dB steps)	N/A	0-50 dB continuous
Max. input sound pressure level	151 dB SPL	10-21 dB	26 dB
Microphone capsule	Dynamic	Electret condenser	
Max. input level	151dB SPL (w/ 21dB attenuator)	–	26dBv
Directivity	Uni-directional	Uni-directional	N/A
Operating voltage	1.5V, AA size (LR6) alkaline battery (x1)	1.5V, AA size alkaline battery	3V, LR6 AA size alkaline battery (x2)
Power consumption	Less than 170mA/3V	Less than 90mA	170mA
Battery life	Approx. 5 hours w (LR6)AA akaline batt.(x1)	Approx. 12 hours w/AA alkaline batteries(x1)	Approx. 4 hours AA alkaline batteries
Dimensions	ø51 x 238mm w/o antenna	ø55 x 216mm (ø2 1/4 x 8 5/8 inches)	40 x 40 x 108
Weight	440g w/battery	Approx. 200g (7.1 oz) w/battery	Approx. 175g (6.18 oz)w/battery
Supplied accessories	Microphone holder, Stand adaptor	Microphone holder, Stand adaptor	-

**Selectable within 12 mHz range*

Specifications

WRT Series Body Pack

Model	WRT-860A(CH)	WRT-822A(CH)	WRT-805A(CH)
Receiving Frequency	770MHz-806MHz 94 channels *	770MHz-806MHz 94 channels *	770MHz-806MHz 94 channels *
Oscillator	Crystal-controlled PLL synthesizer	Crystal-controlled PLL synthesizer	Crystal-controlled PLL synthesizer
Tone signal	Appox. 32kHz (for tone squelch control)	32.768kHz	Appox. 32kHz (for tone squelch control)
Type of emission	110KF3E	110KF3E	-
RF power output	20mW	10mW	10mW or 2.5mW, selectable
Frequency stability	–	Within ±15kHz	Within ±0.005%
Antenna	1/4 whip antenna, BNC-R type connector	1/4-wavelength	1/4 whip antenna
Pre-emphasis	50µs	50µs	-
Reference deviation	±5kHz	±5kHz	±5kHz
Maximum deviation	±40kHz	±40kHz	-
Frequency response	70Hz~15,000Hz	70Hz~15,000Hz	70Hz~15,000Hz
Signal-to-noise ratio	>60dB (A-weighted)	60dB or more (A-weighted)	57dB (A-weighted)
Modulation distortion	Less than 1.0%	1.00%	-
Attenuator adjustment range	0 to 30dB in 3dB steps	0 to 21dB, variable in 3dB steps	21dB, variable in 3dB steps
Max. input sound pressure level	+6dBV	-	-
Reference input level	-60dBV	-60dBV at Audio Attenuator 0dB	-
Microphone capsule	–	-	–
Max. input level	+6dBV	7dBV	+17dBV (-40dBV position, attenuator 21 dB)
Directivity	–	-	–
Operating voltage	3V, AA size alkaline battery (x2)	3V, LR6 AA size alkaline battery (x2)	1.5V, AA size alkaline battery
Power consumption	185mA	175mA	Less than 170mA
Battery life	Approx. 6 hours w/two AA alkaline batteries	Approx. 8 hours AA alkaline batteries	Approx. 6 hours AA alkaline battery
Dimensions	ø63 x 168 x 17mm (ø2½ x 6⅝ x 1 1/16 inches)	ø63 x 103mm x 17mm	58 x 93 x 2mm (2⅛ x 3¼ x 27/32inches)
Weight	Approx. 155g (5.5 oz) w/batteries	Approx. 165g (6oz.) w/batteries	Approx. 100g (3.5 oz) w/battery
Supplied accessories	Leatherette case, Spare battery case, Cable	Leatherette case	

**Selectable within 12 mHz range*

Specifications

WRR Series Portable Tuners

Model	WRR-855A(CH)	WRR-810A(CH)	WRR-805A(CH)
Receiving frequency	770MHz-806MHz 94 channels *	770MHz-806MHz 94 channels *	770MHz-806MHz 94 channels *
Oscillator	Crystal-controlled PLL synthesizer	Crystal-controlled PLL synthesizer	Crystal-controlled PLL synthesizer
De-emphasis	50µs	50µs	—
Reference deviation	±5kHz	±5kHz	±5.0kHz
Maximum deviation	—	±40kHz	—
Spurious rejection	More than 80dB	More than 50dB	More than 70dB
Frequency response	100Hz~15,000Hz	100Hz~15,000Hz	100Hz~15,000Hz ±3 bD
Signal-to-noise ratio	60dB (A-weighted)	More than 60dB (A-weighted)	More than 60dB (A-weighted)
Harmonic distortion	Less than 1.0% at 1kHz	Less than 1.0% at 1kHz	—
Dynamic range	—	—	—
Selectivity	More than 50dB	More than 60dB	More than 60dB
Audio output level	-40dBm, 25Ω unbalanced	-58dBu	-58dBm (±5kHz deviation at 1kHz modulation)
Audio output connector	D-sub 15-pin	SMC94S	3.5mm dia. phone (TRS), balanced
Antenna connector	BNC-R type	BNC-R connector	—
Power requirements	AC 120V, 60Hz	—	DC 3V, two batteries R6 (size AA)
Power consumption	Less than 200mA at External DC 7V	—	—
Operating voltage	DC 7 V	AA size alkaline batteries (x4)	—
Current consumption	—	190mA	Approx. 170mA
Dimensions	88(W) x 119(H) x 31.3(D)mm (3½ x4¾ x 1¼ inches)	63(W) x 120(H) x 17(D)mm (2½ x 4¾ x 1 1/16 inches)	44 x 121 x 24 mm (1 3/4 x 4 7/8 x 31/32 inches)
Weight	Approx. 280 g (10 oz) WRR-840A; Approx. 5.4 kg (11 lb 15 oz)	Approx. 220g (7 oz) w/batteries	Approx. 140g (4.9 oz) w/batteries
Supplied accessories	Antenna 1/4 wave length whip (x1) Operation manual	Antenna 1/4 whip, output cable, earphone Holder kit for Betacam® camcorder Attachment case for Betacam® camcorder	Leatherette case w/mounting bracket(x1) 1/8" locking connector to 1/8" stereo cable(x1)

**Selectable within 12 mHz range*

Specifications

WRR Series Rack-Mount tuners

Model	WRR-802A(CH)	MB-806A	WRU-806A(CH)
Receiving frequency	770-806 Mhz 94 channels *	770 Mhz to 806 Mhz *	770MHz~806MHz 94 channels *
Oscillator	Crystal-controlled PLL synthesizer	—	Crystal-controlled PLL synthesizer
De-emphasis	—	—	-
Reference deviation	±5kHz	—	±5.0kHz
Maximum deviation	—	—	±40kHz
Spurious rejection	More than 70dB	—	—
Frequency response	100Hz~15,000Hz	—	100Hz~15,000Hz
Signal-to-noise ratio	More than 60dB (A-weighted)	—	More than 60dB (A-weighted)
Harmonic distortion	Less than 1.0% at 1kHz	—	Less than 1.0%
Dynamic range	—	—	—
Selectivity	—	—	More than 60dB
Audio output level	0dBm (±16kHz deviation at 1kHz modulation) -20dBm (±5kHz deviation at 1kHz modulation)	-20 dBm/-58dBm (±5 kHz deviation at 1 kHz)	—
Audio output connector	XLR Balanced	XLR type	—
Antenna connector	BNC-R type	BNC-R type	—
Power requirements	—		—
Power consumption	—	30W	—
Operating voltage	DC 9 V	AC 120 V, 60 Hz	DC 9 V
Current consumption	500mA	—	225 mA
Dimensions	218(W) x 44(H) x 210(D)mm (8⅝ x1¾ x 8⅜ inches)	482(W) x 44(H) x 300(D) mm (19 x1¾ x 11⅞ inches)	56(W) x 26(H) x 122(D)mm (2¼ x 1⅛ x 4⅞ inches)
Weight	Approx. 1.6 kg (3 lb 8 oz)	3.6 kg (7 lb 15 oz)	160g (5.7 oz)
Supplied accessories	AC power adapter(x1)	Operating instructions (1) Antenna (2) AC power cord (1)	Operating instructions (1)

**Selectable within 12 mHz range*

Desired Number of Wireless Frequencies versus Required Units of Each Models

Desired Number of W/L Frequencies	Vacant TV Channels to Be Used						Group Name	Required Units of WRT-867A/830A/820A/810A*			Required Units of WRR-820A			Required Units of WRR-840A			Required WD-820A
	64	65	66	67	68	69		(64)	(66)	(68)	(64)	(66)	(68)	(64)	(66)	(68)	
8					●		13			8						4	1
						●	12			8						4	
			●				13		8						4		
				●			12		8						4		
	●						13	8						4			
		●					12	8						4			
11					●	●	11			11			1			5	2
			●	●					11						5		
	●	●						11				1		5			
	●		●		●		A3	1	3	7	1	1	1		1	3	
		●		●		●	A2	1	3	7	1	1	1		1	3	
	●		●		●		A3	3	1	7	1	1	1	1		3	
		●		●		●	A2	3	1	7	1	1	1	1		3	
12	●		●		●		A3	2	3	7		1	1	1	1	3	
		●		●		●	A2	2	3	7		1	1	1	1	3	
			●	●	●	●	A1		4	8					2	4	
	●	●			●	●		4		8				2		4	
13	●		●		●		A3	3	3	7		1	1	1	1	3	
		●		●		●	A2	3	3	7		1	1	1	1	3	
			●	●	●	●	A1		5	8		1			2	4	
	●	●			●	●		5		8	1			2		4	
14			●	●	●	●	A1		6	8					3	4	3
15		●	●	●	●	●		1	6	8	1				3	4	
16		●	●	●	●	●		2	6	8				1	3	4	
17	●	●	●	●	●	●		3	6	8	1			1	3	4	
18	●	●	●	●	●	●		4	6	8				2	3	4	
19	●	●	●	●	●	●		5	6	8	1			2	3	4	

* The WRT-830A has (68) version only

Specifications

ECM Series

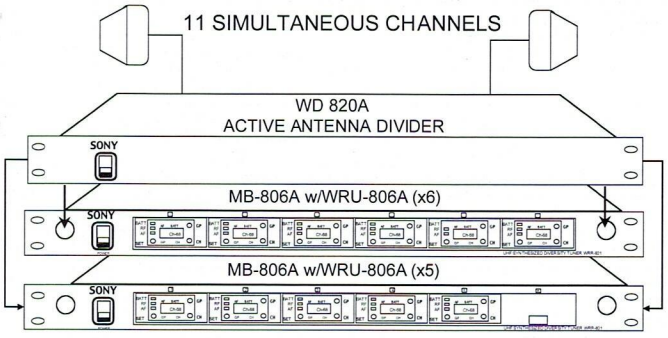
Model	ECM-44BMP	ECM-121BMP	ECM-122BMP	ECM-310BMP
Capsule type	Electret condenser	Electret condenser	Electret condenser	Electret condenser
Frequency range	40 to 15,000Hz	100 to10,000Hz	100 to10,000Hz	70 to12,000Hz
Directivity	Omni-directional	Omni-directional	Omni-directional	Wide-cardiod
Sensitivity (0dB=1VPa. at 1kHz)	-40dB (10mV)	-41dB (8.9mV)	-41dB (8.9mV)	-44dB (6.3mV) ±3dB
Output impedance (at 1kHz, unbal)	2.5Ω ±30%	2.5Ω ±30%	2.5Ω ±30%	800Ω ±30%
Inherent noise	—	—	—	Less than 34dB SPL
Normal operating voltage	DC 3V (Supply range: DC 3V to 10V)	DC 3V (Supply range: DC 3V to 10V)	DC 3V (Supply range: DC 3V to 10V)	DC 3V (Supply range: DC 3V to 10V)
Current drain	Less than 0.4mA	Less than 0.4mA	Less than 0.4mA	Less than 0.32mA
Operating temperature	0°C to 60°C (32°F to 140°F)	0°C to 60°C (32°F to 140°F)	0°C to 60°C (32°F to 140°F)	0°C to 60°C (32°F to 140°F)
Power supply	Supplied by a Sony wireless microphone system transmitter			
Output connector	ø3.5mm (5/32 inches) 3-pole mini phone plug with lock mechanism			
Microphone cable	1.2m (47 1/4 inches)	0.2m (7 7/8 inches)	1.2m (47 1/4 inches)	1.2m (47 1/4 inches)
Dimensions Microphone head	ø8.5 x 14.5mm (ø11/32 x 19/32 inches)	ø8.5 x 17.0mm (ø11/32 x 11/16 inches)	ø8.5 x 17.0mm (ø11/32 x 11/16 inches)	ø10mm (ø13/32 inches)
Mass Microphone head	Approx. 2g (0.07 oz)	Approx. 3g (0.11 oz)	Approx. 3g (0.11 oz)	Total mass w/o connector Approx. 46g (1.62 oz)
Finish	Matte black finish	Black nickel finish	Black nickel finish	Matte black finish
Supplied accessories	Holder clip (x1) Wind screen (x1)	Holder clip (x1) Wind screen (x1)	Holder clip (x1) Wind screen (x1)	Wind screen (x1)

Specifications

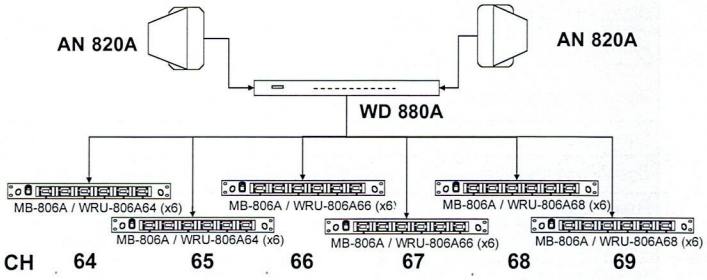
ECM Series

Model	ECM-77BMP	ECM-166BMP
Capsule type	Electret condenser	Electret condenser
Frequency range	40 to 20,000Hz	100 to10,000Hz
Directivity	Omnidirectional	Unidirectional
Sensitivity (0dB=1VPa. at 1kHz)	—	—
Output impedance (at 1kHz, unbal)	2.5Ω ±30%	2.5Ω ±30%
Inherent noise	—	—
Normal operating voltage	—	—
Current drain	—	—
Operating temperature	—	—
Power supply	—	—
Output connector	—	—
Microphone cable	Approx. 1.2 m (3.9 feet)	Approx. 1.2 m (3.9 feet)
Dimensions Microphone head	5.6 mm dia. x 12.5 mm (1/4" dia. x 1/2")	12.5 mm dia. x 23.5 mm (1/2" dia. x 15/16")
Mass Microphone head	Approx. 1.5g (0.05 oz)	Approx. 3.5g (0.12 oz)
Finish	—	—
Supplied accessories	Holder clip (x1) Wind screen (x1) Operating Instructions (x1)	Holder clip (x1) Wind screen (x1) Operating Instructions (x1)

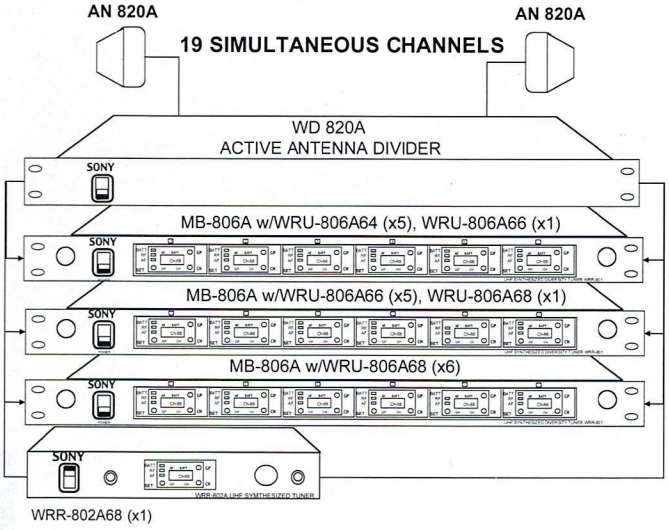
Multi-Channel Wireless Configurations



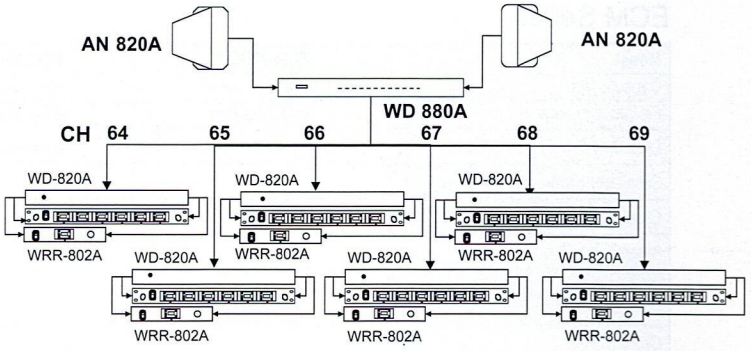
36 SIMULTANEOUS CHANNELS



36 channel array (6 per TV channel)
6 frequencies maximum per channel group
(Up to 42 channels total are possible!)



42 SIMULTANEOUS CHANNELS



By utilizing 6 WD-820A antenna dividers, each feeding a "6-pack (MB-806A w/6 WRU-806A) on one antenna output and a WRR-802A single channel tuner on another output for a total of 7 channels per 6 MHz TV band

SECTION 12

Headphones

MDR-7509 Studio Monitor Headphones 12-1
MDR-7506 Studio Monitor Headphones 12-1
MDR-V700DJ Studio Monitor Headphones 12-2
MDR-7505 Studio Monitor Headphones 12-2
MDR-7502 Stereo Headphones 12-3
MDR-NC20 Noise Canceling Headphones 12-3

Studio Monitor Headphone

MDR-7509

- Designed and engineered for high end applications
- Circum-Aural earcup design
- Large, Aura-Nomic design 50mm driver unit
- Powerful neodymium magnet
- Oxygen-free copper (OFC) voice coil
- Amorphous diamond evaporated diaphragm
- Convenient folding design with supplied carrying case
- Reversible earcups for single-side monitoring
- Cushioned headband
- Concealed, single-sided class 1 lc-OFC coiled cord
- Screw type, gold-plated stereo unimatch plug adaptor supplied
- Frequency response 5Hz - 30kHz
- 3,000mW super high power handling capacity

Specifications

Headphone type:	Dynamic, closed
Driver unit size:	50
Magnet type:	Neodymium
Plug type:	Gold, 1/4″ stereo phone
Frequency response:	5-30 KHz
Impedance:	24 ohms
Sensitivity (db/mW):	107
Power Handling Capacity:	3000 mW
Cord length (ft):	9.8
Weight (oz):	10.6

Professional Headphones

MDR-7506

- Rugged Design – Proven to be reliable in the toughest situations
- Folding Construction for Compact storage
- 40mm Driver Unit – For clear, high quality sound reproduction
- Closed-Ear Design - Comfort and reduction of external noise interference
- Stereo Unimatch Plug allows use in both 1/4″ and 1/8″ applications
- Gold Connectors and Oxygen Free Copper Cord – Reliable and stable signal connection and transmission
- Frequency Response – 10Hz to 20kHz
- Supplied Soft Case for Protective storage

Supplied Accessories

Unimatch plug

Specifications

Headphone type:	Dynamic, closed
Driver unit size:	40mm diameter
Impedance:	63 ohms
Sensitivity:	106db/mW
Rated Power:	0.3W
Plug type:	Gold, 1/4″ stereo phone
Power Handling Capacity:	1.0W
Frequency response:	10-20,000 Hz
Cord length:	One side 3m
Output Connector:	Unimatch plug
Weight (w/o cord):	7.8 oz (220 g)

Professional Headphones

MDR-V700DJ

- Monitoring headphones for DJ and remix use
- Swivel earcup allows easy single sided monitoring on shoulders
- 50mm driver unit for high quality sound
- Resists high power input up to 3000mW
- Neodymium magnet for powerful bass and clear treble sound
- Sleek silver metallic finish
- Coiled cord
- Compact foldable design
- Closed, supra-aural design
- Gold-plated Stereo UniMatch plug

Specifications

Headphone type:	Dynamic, closed
Driver unit size (mm):	50
Magnet type:	Neodymium
Plug type:	Gold, 1/4″ stereo phone
Frequency response:	16-22,000Hz
Impedance:	24 ohms
Sensitivity (db/mW):	107
Power Handling Capacity:	3000 mW
Cord length (ft):	9.8
Weight (oz):	10.6

Professional Headphones

MDR-7505

- Monitor headphones for DJ and remix use
- Swivel earcup allows easy single sided monitoring on shoulders
- 40mm driver unit for high quality sound
- Compact foldable design
- Closed, supra-aural design
- Gold-plated Stereo UniMatch plug

Specifications

Headphone type:	Dynamic, closed
Driver unit size (mm):	40
Magnet type:	Neodymium
Plug type:	Gold, 1/4″ stereo phone
Frequency response:	16-22,000 Hz
Impedance:	24 ohms
Sensitivity (db/mW):	105
Frequency response: (Hz-kHz):	10-25
Power Handling Capacity:	1000 mW
Cord length (ft):	9.8
Weight (oz):	7.9

Professional Headphones

MDR-7502

- Cost Effective – Quality sound at a reasonable price
- 30mm Driver Unit – For clear, high quality sound reproduction
- Closed-Ear Design – Comfort and reduction of external noise interference
- Stereo Unimatch Plug allows use in both 1/4″ and 1/8″ applications
- Gold Connectors and Oxygen Free Copper Cord – Reliable and stable signal connection and transmission
- Frequency Response – 60Hz to 16kHz

Specifications

Headphone type:	Dynamic, closed
Driver unit:	30mm diameter
Impedance:	45 ohms
Sensitivity:	102dB/mW
Rated power:	0.1W
Power handling capacity:	0.5W
Frequency response:	60 – 16,000 Hz
Cord:	Two sided, 2m
Output connector:	UniMatch plug
Weight (w/o cord):	5.1 oz. (145g)

Supplied Accessories
Unimatch plug

Noise Canceling Headphones

MDR-NC20

- Noise canceling headphones reduce ambient noise, and provide a quieter monitoring environment
- Ambient sound is reduced with a synthesized "anti-sound" signal produced by the noise canceling circuit
- Compact folding style
- Neodynium magnets are used to deliver powerful sound
- Operates as a passive headphone when noise canceling circuit is not activated

Specifications

Headphone type:	Dynamic, closed
Power source:	DC 1.5V, x1 AAA Battery
Plug type:	Gold plated 90° stereo mini plug
Impedance:	24 ohms @ 1kHz (power on) 56 ohms power
Frequency response:	16-22,000 Hz
Sensitivity:	99 dB/mW (power on) 98 dB/mW (power off)
Cord length:	1 meter (39 3/8 inches)
Weight:	Approx. 175g (6.2oz) including battery

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